7 Public-Private Participation in the Provision of Infrastructure to Tirupur: A Governance Perspective

USHA P. RAGHUPATHI

7 Contents

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Governance deals with the relationship between government and the civil society. Changes in the system of governance must be guided by greater accountability and efficiency in management. Governance with greater accountability can also be brought about through fiscal innovations, including private sector financing of urban infrastructure projects. In recent years, the private sector has been playing an increasing role in the provision and management of urban infrastructure and services in India. The functioning of local governments can also be strengthened and made more efficient by such private sector involvement.

The new economic policy of the Government of India, initiated in the early 1990s, encourages private sector participation in urban infrastructure projects. The Central Government, in its attempt to cut down the budgetary deficit, has had to make cuts in its allocation to different sectors. This has led the government to invite the private sector, including external partnerships, in the provision of urban infrastructure through various arrangements such as BOT, BOO, etc. The government is increasingly playing the role of a facilitator rather than that of a provider. In this liberalized environment, the entry of the private sector into the hitherto government held sector of water supply has also become possible.

This paper discusses a case for governance through fiscal innovation using public-private sector participation in water supply as an example. The case is of a small town called Tirupur, located in southern India, where the government has taken a major initiative in involving private sector in the provision of infrastructure for the city's industrial estate as well as for the city itself. This initiative will improve both the economic and social life of the residents of the town.

Tirupur town, which resembles an overgrown village, is going to be the first town in the country to have a water supply project that will be developed and implemented through a public-private partnership arrangement, in this case, by a joint venture company. It will also have the first water supply project that will be commercially viable and financed through debt and equity.

1 BACKGROUND

Tirupur is a special grade municipal town located 50 kms to the north-east of Coimbatore (a major city in Tamil Nadu) in southern India. It is spread over an area of 27.20 sq. km. In 1971 the town recorded a population of 113302 which increased to 235661 by 1991 (Census of India). By the turn of the century its population is projected to grow to over 300,000. The town has been experiencing a decadal growth of 42 to 46 per cent since 1971 (Table 1). Migration to the town has been increasing due to growth in the economic activities and nearly 40,000 people migrated to the town during 1981-91. Until 1970 almost four-fifths of the land in Tirupur was used for agriculture; this dropped to 39 per cent in 1980 and further to 35 per cent in 1990. Since 1990, the town has developed in all directions, encompassing the villages in the periphery of the town.

Today, Tirupur is a booming business centre. The economic base of the town is largely connected with the manufacture of cotton knitwear garments. The origin of the hosiery industry in Tirupur may be traced to the 1930s. The first hosiery unit was set up in 1935 and since then, the industry has graduated from a cottage industry into a small scale industry. Today, Tirupur has the largest concentration of cotton knitwear units in the country.

Often referred to as the "banian city" (the vest city), it mainly produced vests and undergarments, initially for the domestic market but later started exporting these and other cotton knitwear garments in a big way to worldwide markets. The growth experienced by the town has been phenomenal. Tirupur accounts for over three-fourths of India's cotton knitwear exports. In 1986 exports from the town were a mere Rs 0.18 billion worth. By 1992, the town contributed Rs 15 billion through direct and indirect exports. It is estimated that this figure may almost reach Rs 25 to 30 billion in 1997 (see table 2 for the growth in exports from the town). In 1986, there were only 10 to 15 leading exporters in the town and within a span of a decade the number of exporters increased to nearly 400 (1996). This spectacular growth has been achieved despite poor levels of support infrastructure such as water supply, effluent disposal, roads, power, and telecommunications.

TABLE 1. Population Growth of Tirupur

Year	Population	Variation	% increase
1901	6,056	—	—
1911	9,429	3,373	55.69
1921	10,851	1,422	5.08
1931	18,059	7,208	16.42
1941	33,099	15,040	83.23
1951	52,479	19,380	58.55
1961	79,773	27,294	52.00
1971	113,302	33,529	42.03
1981	165,205	51,903	45.81
1991	235,661	70,456	42.65

SOURCE. Census of India

The sudden growth of the town has widened the gap between demand for and supply of infrastructure. Water supply in the town is extremely inadequate. Until some years ago the town used to get a supply only once a week, which in 1996-97 improved to 1-2 hours on alternate days. The main source of water to the town is from rivers and some portion of the demand is met from tubewells. Water for industrial use is not available from the municipal supply and the industrial units have to make private arrangements for their entire requirement.

Water pollution levels in the town have been rising over the years. The town has no sewerage system and the only river that passes through the town called Noyil is, in fact, an open sewer now. The industrial units do not have effluent treatment facilities. The bleaching and dyeing industries consume large quantities of water and dispose it untreated into the Noyil River. This water is carried to downstream villages affecting their agriculture, human habitation and all forms of

life along the way. The ground water pollution in many places was noted due to a fall in the yield of agricultural land. Some of the fresh wells dug up yielded coloured water indicating that the chemicals had seeped into the soil and had reached the aquifer.

TABLE 2. The Success Story

Year	All India		Tirupur (Direct Exports Value)	
	Pieces in million	Value in Rs crores	Pieces in million	Value in Rs crores
1984	49.54	89.77	10.42	9.69
1985	56.68	104.89	17.21	18.69
1986	80.20	159.38	28.87	37.40
1987	112.24	283.85	39.17	74.49
1988	120.95	358.19	45.19	104.24
1989	165.60	543.17	61.40	167.39
1990	222.20	851.24	88.87	289.85
1991	243.30	1147.03	90.50	429.48
1992	303.00	1894.69	133.90	773.37
1993	413.10	2874.38	889.30	1162.43
1994	407.00	3151.30	176.40	1318.00
1995	218.00	1733.71	212.56 (From January-June)	1448.76 (From January-December)
1995 (January-June)			106.50	727.62
1996 (January-December)			151.16	1136.74

SOURCE. 'Growing on a Paradox', *Business Standard*, July 31, 1996

The haphazard growth of the town without proper environmental regulations enforced by the Municipality or the Tamil Nadu Pollution Control Board (TNPCB) have encouraged exporters to discharge effluents

consisting of toxic chemicals and colours in the Noyil River. Many dyeing units discharge their effluent into any open water body or even on land. This has considerably increased health risks in the town and also affected water supply.

The roads in the town are in poor condition with many potholes. The roads are also very congested and are unable to take the daily traffic load. The traffic is a mix of vehicles ranging from bullock carts to trucks. The power situation is appalling, with power tripping at least six to seven times a day. Most units operate on captive power. The telecommunication system is inadequate and outdated. In the absence of the latest communication technology, designs have to be couriered abroad for approval, increasing the order-process time.

It was the critical water supply situation along with the lack of other support infrastructure for industrial growth and exports, that brought about this new financing innovation in this sector.

Tirupur is a contradiction in some respects. It is possible to find the old with the new, and traditional with the modern in the town. For instance, it has very modern industrial units with fully automated equipment on the one hand, and on the other, even today, one of the most common modes of transporting goods in the town is a bullock cart. Water is supplied to the town through pipelines, water tanker trucks as well as from wooden water drums loaded on bullock carts. It is unusual to find a booming town having a strong economic base to have such antiquated systems of service delivery.

II WATER SUPPLY SITUATION

One of the main problems in Tirupur today is water supply. The town gets potable water for just one to two hours on alternate days. Since piped water supply is insufficient, water tankers can be spotted all over the town. The most common sight in the town is that of men, women and children either carrying water or waiting for water tankers at designated spots.

The first water supply scheme for the town was commissioned in 1932 and was designed for a population of 20,000 with a per capita supply of 22.7 litres per capita per day (lpcd). The distribution from this source, which was 8 kms. away, was confined to the limits of the old town. This source could not, however, alleviate the water problems of the town and a new scheme called Bhawani River Scheme I, the source of which was 55 kms away at Mettupalayam, was commissioned

in 1962. The source, with a capacity of 7.0 mld of water, supplied about 5.0 mld to the town, the rest was supplied to the way side villages. However, the town's population grew at an unexpected rate due to the export activity, which forced the town to think of the second water supply scheme called the Bhawani River Scheme II. This scheme was an augmentation scheme. The first phase of this scheme has been implemented and the second phase is under completion. These schemes were and are being implemented by the Tamil Nadu Water and Drainage (TWAD) Board.

Box 1

Source of Water Supply and Capacity

Source	Year of Commissioning	Capacity (in mld)	Quantity pumped (in mld)	Distance to source (in Km.)
Kovilvazhi River Bed	1932	0.5	N.A.	8
Bhawani River Scheme I at Mettupalayam	1962	7.0	7.0 (Supply to town is 0.5)	55
Tube wells	-	1	—	—
Bhawani River Scheme II at Mettupalayam	1994	33.00	22.00 (Supply to town is 17.0)	55

SOURCE. Tirupur Municipality
NOTE. mld - million litres daily

At present, the town gets only 27 mld from both the schemes whereas the present demand is 34 mld which is expected to rise to over 41 mld by 1999. About 1.3 mld of water to the town is supplied through tankers.

Most of the commercial and industrial establishments in the town depend on water tankers for their water requirements. The present industrial consumption by the bleaching and dyeing factories of Tirupur is approximately 75 mld. The Tirupur Municipality does not supply water to industries, who obtain water from ground water resources mainly through water tankers. This meets nearly 65 per

cent of their requirement while borewells meet the remainder. The balance of 27 mld is drawn from borewells installed by the industries. Most of this water is ground water obtained from agricultural fields.

There are almost 400 to 500 tankers plying in the town daily supplying upto 48 mld of water to industries. Some of the tankers supplying water to industries are owned by the industries themselves, while others belong to private water tanker operators. In fact, supplying water through tankers is a big business in Tirupur and it has become evident that some of the farmers in the agricultural areas surrounding the town have given up agriculture and have taken to the more lucrative business of supplying water. However, depletion of ground water as well as its contamination is forcing industries to go farther and deeper in search of water-both of which are costly solutions.

III TIRUPUR MUNICIPALITY'S FINANCES

Tirupur was accorded a municipal status in 1960. It had a revenue of Rs 103.12 million and a revenue expenditure of Rs 88.26 million in 1994-95 (Kirloskar Consultants and CEPT, 1997). The main source of revenue for the municipality are property tax, shared revenue from the state, non-tax revenues such as fees, income from properties and grants. Property tax has been the single largest source of revenue for the Municipality contributing between 31 to 41 per cent of the revenue income from 1991-1995. The major heads of expenditure have been public health and sanitation, and water supply & drainage on which 33.6 and 39.8 per cent of the total revenue expenditure was spent in 1994-95.

The financial performance of Tirupur Municipality has been creditable judged by the operating ratio from 1991-1995 which has been over 0.72 during these years (Table 3). However, the debt servicing of the Municipality has not been prompt, resulting in a net overdue of Rs 333.89 million (as in 1994-95).

With this financial position of the municipality, the level of revenues generated, as well as the legal constraints under which it functions, the Tirupur Municipality was not considered an appropriate institution to take on a large integrated infrastructure project designed on commercial lines.

TABLE 3. Tirupur Municipality - Revenue and Expenditure

Heads	Revenue Account (Rs in 00,000)			
1991-92	1992-93	1993-94	1994-95	
A. Income				
1. Property tax	162.58	207.71	328.70	23.11
2. Professional tax	7.01	3.13	12.09	25.16
3. Entertainment tax	116.54	100.52	205.07	119.33
4. Other tax	1.00	0.45	0.44	3.14
5. Water charges	19.73	35.58	66.68	61.76
Sub-total	306.86	347.39	612.98	632.50
6. Revenue grant	56.50	18.10	10.07	18.15
7. Revenue grant	2.37	4.66	2.72	5.24
8. Miscellaneous	148.99	179.57	270.73	365.49
9. Remunerative	3.89	27.87	5.40	9.82
Sub-total	211.75	230.20	288.92	398.70
Total	518.61	577.59	901.90	1031.20
B. Expenditure				
1. General administration	48.98	52.77	62.55	72.76
2. Public works & roads	0.38	41.14	32.23	99.36
3. Education	78.33	19.19	33.49	0.36
4. Water supply & drainage	117.78	156.96	207.23	296.89
5. Street lighting	17.45	19.71	27.12	40.85
6. Public health & sanitation	41.31	175.41	277.63	351.46
7. Solid waste management	69.35	4.30	8.85	18.53
8. Other minor expenditure	4.33	0.53	0.45	2.42
Total	407.91	470.01	649.55	882.63
9. Existing debt servicing	53.39	130.76	48.91	35.46
Surplus/deficit (incl. debt servicing)	57.31	-23.18	203.44	113.11
Surplus/deficit (excl. debt servicing)	110.70	107.58	252.35	148.57
10. Operating ratio	0.79	0.81	0.72	0.86

SOURCE. Kirloskar Consultants Ltd. and CEPT, School of Planing (1997), 'City Infrastructure Priorities-Tirupur', Report prepared for Community Consulting International, New Delhi

IV INFRASTRUCTURE FOR TIRUPUR

Until the Tirupur project came about, urban infrastructure projects in the water supply, sewerage, drainage, and road sectors were undertaken only by the state level government agencies. In the state of Tamil Nadu it was the Tamil Nadu Water Supply and Drainage (TWAD) Board which undertook all capital projects. The initial project proposal for improving water supply, drainage and sewerage for Tirupur was prepared by the TWAD Board. Later, when Tamil Nadu Corporation for Industrial Infrastructure Development (TACID), a Government of Tamil Nadu agency, was set up in 1993 to provide infrastructure to industrial areas of the state these schemes became a part of the integrated infrastructure project for the town.

V PRIVATE SECTOR INVOLVEMENT

In early 1990, Tirupur Exporters Association (TEA), an association of the export industries, approached the State Government requesting for infrastructure for the industrial estate. The request proposal consisted of projects for water supply, effluent treatment, roads, telecommunications and power. The initial project proposal for providing water supply and drainage was drawn up by the TWAD Board. Estimates for other components such as roads, telecommunications, and power were provided by the respective government departments. A master plan for the town–Tirupur Area Development Project (TADP) was, thus, formulated for improving the infrastructure of the town.

Considering the magnitude of investment required, the State Government suggested that private sector funding should be sought for the project. This led to designing the entire project on a commercial format with full cost recovery and paved the way for private sector participation in the water supply sector.

The TEA approached TACID requesting it to provide infrastructure for Tirupur, emphasizing its woeful inadequacy and the importance of Tirupur as an important foreign exchange earner for the country. TACID's the then chief showed sufficient interest in helping Tirupur with the required infrastructure. However, the agency showed its inability to finance the proposal. It was at this stage that a financial institution, called the Infrastructure Leasing and Financial Services (IL&FS), got involved in the project. TACID asked the IL&FS to prepare a feasibility report and arrange for financing of TADP. The

IL&FS was interested in the project because it was a new area for them to work on and it made long-term business sense to enter this sector. Profit motive was not the prime mover for IL&FS but the vast potential for financing water supply projects in Indian cities certainly made business sense. The main actors at this stage of the project were TACID, IL&FS and TEA.

IL&FS got involved in the project towards the end of 1993 and prepared the initial feasibility report at the behest of TACID. The feasibility report was submitted with cost estimates by the middle of 1994. The project was structured on commercial lines and was viable as an integrated project with the following components:

Box 2

Tirupur Area Development Project

Components	Cost (in Rs millions)
1. Water supply	2530
2. Municipal Sewerage	1990
3. Effluent Treatment	1050
4. Road Improvement and Expansion	320
5. Housing	6600
6. Telecommunications	645
Total	13135

SOURCE. IL&FS

(Only the first four components of the project costing Rs 5890 million are being implemented by NTADCL. The remaining two components will be taken up by developers and the concerned state level agency respectively.)

In the initial stages the only institutions involved in decision making were TACID (GoTN), TEA and IL&FS. Tirupur Municipality's role in decision making of any kind was negligible mainly because such powers in the state vest with the Municipal Administration and Water Supply (MAWS) Department of the state government. Municipalities are agencies for carrying out the operation and maintenance functions and are not really planning and decision making bodies for major capital works. It was only after the decision to implement the project was taken by MAWS Department that the Tirupur Municipality got involved in the project.

VI PARTICIPATORY APPROACH

The project has used a participatory approach to project planning. The IL&FS did the feasibility study for the project. It held discussions with the citizens, and conducted quick household surveys to determine the willingness to pay for water supply. IL&FS also held discussions with the industry to ascertain the demand for infrastructure and its willingness to pay for it.

At a later stage IL&FS got a detailed Environmental Impact Assessment report prepared by consultants. An Economic and Social Assessment of the project was also done by another consultant. At the initial stage NGOs were not contacted but later with the involvement of consultants these contacts started. Consultants have also carried out detailed household surveys and survey of industries to determine their requirements and willingness to pay.

VII RAISING RESOURCES AND INSTITUTIONAL ARRANGEMENTS

After the submission of the feasibility report by IL&FS to TACID, the question of raising resources and managing the project came up. It was jointly decided by GoTN (through TACID), TEA and IL&FS that Tirupur Municipality, with its legal, financial, managerial and other constraints, was not the appropriate agency to implement the project and raise resources. Therefore, it was decided to set up a special purpose joint venture company called 'New Tirupur Area Development Corporation Limited' (NTADCL) to raise required resources (both through debt and equity), construct, operate and maintain the created assets. NTADCL, which was registered as a company in February 1995, was expected to raise resources from both internal (public and private) and external sources.

The NTADCL, which had main participation from TACID, TEA, and IL&FS, decided on the financial structuring of the project. The equity for the company has been mobilized from Government of India (GoI), GoTN through TACID, IL&FS, and TEA and it is expected that the BOT operator would also be an equity holder in the company (See Box 3).

Once the project is on stream, resources will be raised through debt instruments including Water Bonds. Long term debt is also being raised from multilateral and bilateral agencies for the project with repayment periods ranging from 20 to 30 years.

Box 3

Financing Plan for NTADCL

Project Cost	:	Rs 5890 million
Means of Finance		
• Debt : Equity	:	2.6:1
• Equity	:	Rs 1630 million
• Debt	:	Rs 4260 million

Debt	Rs in million	Equity	Rs in million
Supplier Credit	500	GoTN/TACID	100
Commercial Banks	500	GoI	100
Debt FIs	1000	TEA	100
World Bank/IL&FS	1500	IL&FS	100
USAID/IL&FS	750	BOT Operator	230
		Surplus from Land	1000

SOURCE: IL&FS

The equity for NTADCL has been so structured that the BOT operator also invests in equity, to not only mobilize additional resources, but also to create his stake in the project and the returns therefrom. This, it is expected, would ensure completion of the project on time and its regular and proper maintenance. The equity participation from GOI and GoTN ensures that the project has government approval. It will also help in the public approval and appeal of the Bonds, as and when they are issued.

VIII BIDDING FOR THE PROJECT

The Expression of Interest advertisement for the construction, operation and maintenance of the Tirupur project was given by NTADCL towards the end of December 1994. This advertisement was given for inviting bidders through international competitive bidding. As a response to the advertisement, 43 bidders expressed interest in the project.

Shortlisting of bidders was undertaken towards the end of February 1995. After the first shortlisting 9 bidders were selected.

Later, in July 1996 another shortlisting was done during which only 4 bidders were selected. Two pre-bid conferences were held with the shortlisted bidders during 1996. These conferences were held to clarify issues relating to technical matters and legal issues regarding contracts. The final bidder is expected to be selected by the end of 1997. The criteria on which shortlisting was being done included financial strength, technical capability, etc. The final selection of bidder would depend on the unit cost of water.

The construction of the project is to be completed within a period of three years. The bidder is expected to finance part of the equity and debt for the project and could also mobilize construction period finance. The bidder would be responsible for the execution of the project from the designing to the commissioning of the project, including operation and maintenance for a period of 30 years. The responsibility to bill the consumer and collect revenue will also be that of the bidder. The selected bidder will also contribute to the capacity building of the staff of Tirupur Municipality with regular training during the concession period.

IX SUMMING UP

The Tirupur project is an innovative and unique approach to financing environmental infrastructure projects in India. It is the first project in the water supply, sewerage and drainage sector which has been designed on commercial lines and is being implemented with public-private sector participation.

Once the project is on stream, the residents of the city as well as industrial and commercial establishments will benefit substantially. The residents are expected to get about 110 lpcd of water every day of an assured quality. Provision of adequate quantity of water daily will also save valuable time for the residents of the town. The residents can then put this time to economically productive work. The industries will also get an assured quantity and quality of water which will help them boost their production. This, in turn, would give a boost to exports which would increase the foreign exchange earnings for the country.

The provision of a sewerage system to the town, non-existant today, will improve the sanitary conditions in the town. This will have a beneficial impact on the health and productivity of the residents. The municipality will also benefit by the sewerage system. It will be able to improve sanitary conditions in the town without incurring any capital expenditure.

Construction of Common Effluent Treatment Plants will reduce water pollution in the water bodies in and around the town. This, apart from improving the health of residents, will also help in prolonged harnessing of ground water which, in future, will be uncontaminated.

Overall, the entire project will have a beneficial impact on the economic and social life of the town. This would not, however, have been possible if the project had depended only on budgetary support from the government. This method of funding causes delays and projects may not fructify.

Involvement of private sector in this project has helped the project to be designed on a commercial format. The advantages of such a commercially viable venture are:

- The capital as well as O&M costs can be recovered.
- This will help in proper maintenance of the system and creation of funds for capital replacement as and when required.
- Pricing of water at an appropriate level will reduce wastage and increase its judicious use. This will also prolong the life of the source.
- The quality and quantity of water can be assured due to adequate finances.

This mode of governance is likely to have greater acceptability in future. It reduces the financial burden on municipal governments for funding capital projects. Purchase of water from a private provider will improve the administrative and collection efficiency of the Municipality. However, increasing water tariff may not be easy because the municipal officials have to deal with the elected representatives and the public when increasing tariff.

X IMPLICATIONS FOR GOVERNANCE

This paper brings into focus an innovation in financing having implications for urban governance. Under the present system of governance, local governments are responsible for the provision and maintenance of civic infrastructure and services. While the local governments are expected to be efficient and responsive, in reality many of these institutions are almost obsolete with very few powers vested in them.

Adopting a new mode of financing local infrastructure can bring about a change in the method of functioning of local governments. The capital works for infrastructure such as water supply, sewerage and drainage have traditionally been financed by the state through budgetary allocation. This has had its impact on the pricing and cost recovery of utilities and services. In the present system the tariff generally does not reflect the capital cost incurred and there is often no debt repayment. The tariff, in most cities, barely covers the O&M costs. The level of collections made through cost recovery often do not affect the grants made to local governments and, therefore, there is no real accountability of local governments to higher levels of government or to the citizens.

The Tirupur project, which uses a new mode of financing and managing an integrated infrastructure project with focus on water supply, is likely to bring in accountability in the system. Since the project has not been financed through budgetary allocations but through equity and market borrowings, the project has to recover full costs in order to be financially sustainable. The tariff fixed, while not reflecting the cost of supplying water for some sections of the population, does increase the burden on others due to cross-subsidy built into the tariff. And even the subsidized population has to, over time, start paying more for water. This will result in greater accountability as there will be greater public scrutiny of the functioning of the agency as well as the service. The quality of the services will be a concern of everyone as almost all the residents will be paying for the service. This will also bring in greater participation from the users of the service. Since there will be a stake in the service and its efficiency and quality for those financing, managing and using the service, there is likely to be greater interest in the functioning of the agency for all the stakeholders. Overall, the governance in the town is likely to improve and it will be more responsive to the needs of the population.