

Alandur Sewerage Project

***A success story of
Public- private partnership
arrangements****

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Alandur Sewerage Project:

A success story of public- private partnership arrangements¹

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This case study describes an example of good governance by using alternative institutional arrangements to finance a Sewerage project. The location is Alandur, classified as an adjacent urban area by the Chennai Metropolitan Development Authority (CMDA). Alandur is the first municipality in the country where initiative has been taken to finance, develop and implement core urban infrastructure projects on a commercially viable basis by using the public- private partnership as a model. The initiative will certainly improve the living conditions, as also the social and economic life of the residents of the town.

The Background

Tamil Nadu is one of the most urbanized states in the country as more than one-third of its population (roughly 34%) lives in the urban areas. The national average in this regard is about 26 per cent (1991 Census). There are six municipal corporations, 102 municipalities and 611 town panchayats in the state. As in many other states, in Tamil Nadu too the provision of water supply and sewerage is the shared responsibility of the state utility and the local body. Tamil Nadu Water Supply and Drainage Board (TWSADB) identifies, designs and implements such projects in the local bodies of the state. Whereas the local body maintains the services and collects water and sewerage tax/ charges as approved by the state government. In case of Chennai however, the situation is different and a city level agency called "Chennai Metropolitan Water Supply and Sewerage

¹ This paper is based on the information collected from the Alandur Municipality; Office of the Project Director, Tamil Nadu Urban Development Project II, Chennai; and a Report on The Alandur Underground Sewerage Project, Experiences with implementing a private sector participation project (2001), prepared by the Tamil Nadu Urban Development Project-II and the Kampsax India Limited under Indo-US FIRE (D) Project, National Institute of Urban Affairs (NIUA), New Delhi., 2001.

Board (CMWSSB)" is responsible for provision and maintenance of water and sewerage services in the metropolitan area of Chennai (including Alandur). It also collects taxes and charges for provision of these services from the users.

Interestingly only one- fifth of the state's total urban population is being served by the sewerage system and the remaining population depend upon septic tanks or such other night soil disposal systems. Considering the acute problem of proper sanitation services to the urban residents of the state, the Government of Tamil Nadu (GOT) in 1997, prepared a scheme to cover twelve major urban centers of the state including Alandur, with improved sanitation services. The other cities were: Salem, Madurai, Coimbatore, Tirunelveli, Trichurapalli,, Pallavaram, Tambaram, Erode, Karur, and Vellore. Though initially Tamil Nadu Water Supply and Drainage Board was identified as a key player in designing the sewerage schemes for these cities, later the Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL), the state asset management company was nominated as the principal agency to coordinate the investigation and detailed studies, and to structure the finance for the projects.

Profile of Alandur

Alandur municipality (AM) is a selection grade municipality, which falls under the geographical boundaries of Kanchipuram district of Tamil Nadu state. It is located adjacent to Chennai, which is at a distance of 14 km on the southern side and forms a part of the Chennai Metropolitan Area (CMDA). According to Census of India 1991, the town has a population of 1,25,444; spread over to 19.5 sq. km. Approximately one-fourth of its population lives in slums. With almost no or very little industrial base, the town has developed a residential suburb of Chennai, and is demanding more or less similar kind of infrastructure and services as enjoyed by the residents of Chennai. The basic information on Alandur is presented in Table 1.

Table 1: Basic Information on Alandur

Particulars	Statistics
Area:	19.5 sq. km
Population: 1991 Census	1,25,444
2000 Estimated	1,65,000
2027 Estimated	3,00,000
Civic status	Selection Grade Municipality
Number of wards	42
Households	19800
<u>Existing water supply:</u>	
Source	Palar River
Quantity supplied day (mlpd)	4.5 millions liters per
Per capita supply day (lpcd)	33 liters per capita per
No of bore wells	211
No of open wells	28
No of public fountains	199
<u>Proposed water supply:</u>	
Source	Krishna River
Quantity to be supplied	30 mlpd
Per capita	100 lpcd
	Sewerage No sewerage system at present. A majority of households have water borne sanitation facilities such as septic tanks. Existing liquid waste disposal in open storm water drains without any treatment. Total length of storm water drains: about 60 km.
Existing solid waste disposal	Open dumping at Pallikaranai, located about 4 kilometer from the municipality
Length of roads	135 km
	Municipal finances (1999-0) Total revenue receipts: approx. Rs. 664 lakh;
Revenue expenditure: approx.	Rs. 369 lakh (SURPLUS BUDGET)
Source: Alandur municipality	

The Project

The chairman of Alandur municipality, R.S. Bharati in 1996, initiated the Alandur Sewerage Project (ASP) that presents a unique case in the area of public-private partnership in the urban sanitation sector. He placed the proposal before his council to provide an underground drainage system in Alandur municipality with a view to improve the living conditions of its residents. Currently, the town has no sewerage system and the majority of its residents are using water borne sanitation facilities for disposal of night soil. The households either have septic tanks or holding tanks, and the municipality collects the sewage periodically in the tankers and disposes them in the low-lying areas outside the municipal limits. The sullage and sewage overflow from septic tanks from the households is presently let into the open storm water drains, which finally accumulate as stagnant water in the south-eastern corner of the town, creating a breeding ground for mosquitoes and diseases. This has increased the health risks in the town, and has also affected the ground water sources. Thus for improving the prevailing sanitary conditions in the town, ASP was designed with the following objectives:

- To improve the standard of living of the residents of Alandur (at par with that of Chennai);
- To eradicate the mosquito menace;
- To provide the most essential basic facility to all the residents of the town;
- To avoid the recurring expenditure on septic tank cleaning; and
- To avoid ground water contamination.

The proposed sewerage system was to be designed for the targeted population of about 3 lakh persons and planned to be completed within a five-year period from its inception date. The project has the following components:

- Sewerage network consisting of the main sewer line, branch sewer line and manholes;
- Construction of a sewage pumping station;

- A sewage treatment plant; and
- Low cost sanitation

The length of the proposed system will be 120 km, including 19 km for the main sewer and 101 km for the branch sewer lines. A pumping station and a sewage process treatment plant having a capacity of 24 mlpd are proposed to be constructed at Perungudi, located about 6 km away from the municipal limits of the town. The land for installing the pumping station and the sewage treatment plant is already in the possession of the municipality. As the topography of Alandur is usually flat and the ground is sloping towards the south-eastern side of the municipality, where the storm water drains as also the natural city drainage system terminate, the raw sewage is proposed to be pumped to the Perungudi sewage treatment plant. The treated effluent from the plant is to be utilized for afforestation.

The work of the proposed project will be carried out in two phases. In the first phase (initial two and half years period), 50 per cent of the branch sewers, main sewers, pump house including installation of machinery, pumping main and one 12 mlpd capacity sewage treatment plant will be completed and commissioned. The remaining work related to the project will be carried out in the next phase.

The operation and maintenance of the sewerage system including sewer lines, pump houses, pumping plants, will be carried out by the municipality. However, the BOT contractor will operate and maintain the Sewage Treatment Plant during the lease period of 14 years and hand over the STP to the municipality at the end of the lease period.

Project Initiation

Considering the lack of resources at the municipal level, both in financial terms as well the technical expertise, to undertake such infrastructure projects, it was decided by the state asset management company- TNUISL and the municipal administration of Alandur that the construction of underground

sewerage system in Alandur town such as laying of pipes, construction of pumping station, etc. will be done under BOQ (Bill of Quantities) basis, and the sewerage treatment plant (STP) under BOT (Build, Operate and Transfer) basis. The bidding document for the combined BOQ and BOT works was prepared as per standard World Bank works contract format. Beside the construction responsibility, the contractor also has to undertake operation and maintenance of the sewerage system for a period of five years from the date of completion of the construction, on a fixed fee basis. The collection of tariff and provision of new connections during the O&M phase would be undertaken by the municipality directly. The municipality has worked out a detailed staffing plan to undertake the above responsibility. The concerned staff will be trained during the project construction and its initial maintenance period that is five years.

In order to ensure financial discipline in the project, TNUIFSL advised the municipality to maintain separate books of accounts including profit and loss and a balance sheet statement for the above project. Thus the municipality has to maintain a double entry accounting system for the project. Incidentally, the state department of Municipal Administration and Water Supply, Government of Tamil Nadu instructed all the municipal bodies of the state to implement the new system of accounting based on double entry accrual accounting with a balance sheet with effect from 1st April 2000.

The World Bank² has approved the contracting procedure for award of Alandur sewerage project, and has asked the municipality to start the process of inviting tenders for implementation of the project. The sequence of events in this regard was as follows:

² The World Bank approval for the tendering procedure, etc. was necessary as the bank is the leading financial institution, which facilitated state level reforms in urban infrastructure financing in Tamil Nadu. The Tamil Nadu Urban Development Fund (TNUDF), for example, established in 1988 under the World Bank assisted Tamil Nadu Urban Development Project (TNUDP) is the key player in financing urban infrastructure in the state.

- The Tamil Nadu Urban Infrastructure Financial Services Limited (*TNUIFSL*), the state asset management company formed with a holistic view for improving the urban infrastructure levels in the state, was nominated as the agency to coordinate the investigation and detailed studies, and to structure the finances for the project.
- In 1997, M/s Consulting Engineering Services Limited was appointed as a consultancy organization by the TNUIFSL to carry out the investigations and engineering reports for the Alandur project. The scope of work included project design, locations of pumping stations and treatment plant, and cost estimates.
- In 1998, the preliminary report on the project was submitted to the committee. The members of the committee were: Commissioner, Alandur municipality; Engineering Director, Tamil Nadu Water Supply and Sewerage Board (TWSSB); Suptd. Engineer, Chennai Metro Water Supply and Sewerage Board (CMWSSB); Commissioner of Municipal Administration (CMA), Govt. of Tamil Nadu; and Technical Adviser, TNUIFSL. On approval of the preliminary report by the committee, the consultant prepared the final report on the feasibility of the scheme and submitted it to the concerned department of the Government of Tamil Nadu (GOT) for its approval.
- GOT referred the report to the special committee consisting of Engineering Director, TWSSB, Technical Adviser, TNUIFSL, and Engineering Director, CMWSSB for its technical approval. However, the GOT accorded administrative sanctions to the project vide order. G.O. Ms (3D) MAWS Department dated 9-12-1998.
- Date of technical sanction of the project: 27 January, 1999
- Date for tender submission for technical proposal: 26 October 1999; and for financial proposal: 16 December 1999.

- Award of contract 3 February, 2000 to IVRCL Infrastructures and Projects Ltd in joint venture with Balckle- Durr and Wabag Technologies Ltd.
- Agreement signed on-2 March 2000.
- Expected date of completion as per agreement- 31March, 2005.
- Expected date of completion as per municipality: first phase-30 August 2001; and second phase-31 March 2003.

It may be mentioned that considering the sensitivity of the project, the World Bank scrutinized the entire tender procedure before clearing it. A two stage bid system was adopted- one comprising the technical proposal and the other comprising the financial proposal. Based on the evaluation of the proposals and on the recommendations of TNUIFSL, the project was awarded to the IVRCL Infrastructures & Projects Ltd. In joint venture with Balcke- Durr and Wabag technologies Ltd. based at Hyderabad in February 2000, and the site was handed over to them subsequently. As TNUIFSL was identified as the nodal agency for project implementation, it has undertaken the responsibility for project structuring and contract formulation. The contract document was structured into three parts, and included (i) a construction contract; (ii) operation and maintenance contract; and (iii) a lease agreement for the sewage treatment plant. M/S Kirloskar Consultants Limited was appointed by TNUIFSL to assist in drafting the documents.

In order to ensure timely implementation of the project and adherence to quality specifications, Consulting Engineering Services Limited (CESL) was appointed as Project Management Consultants (PMS) for detailed supervision and quality control. Along with the consultants, the Chairman, Commissioner and Engineer of Alandur Municipality review the progress of the project on a weekly basis. It may be mentioned that Commissioner of Municipal Administration, Government of Tamil Nadu, Secretary, Municipal Administration & Water supply and Chief

Executive, TNUIFSL also reviews the progress of the project every month, and provides administrative support for acquiring the necessary clearances from agencies such as the railways, highway authority, PWD, etc. for speedy implementation of the project.

It is important to mention that while conducting the feasibility study on the project, a Willingness to Pay Survey was also conducted by the consultants in order to assess the scheme's acceptability by the citizens of Alandur town, and their willingness to pay for the service. All the 42 wards of the municipality have been covered under the survey. The findings of the survey are given in Box 1.

BOX 1: Willingness to Pay (WTP)

The WTP survey covered more than 10 per cent of the population of the Alandur Municipality, spread over to 42 wards. It indicates that the average household income of the majority of the people is in the range of Rs 1000-5000 per month. There are about 24 thousand assessed properties in the town of which nearly 70 per cent have the municipal water connection. Whereas non-domestic consumers pay in the range of Rs 51-100 per month for water charges, domestic consumers pay only Rs 21-50 per month. Majority of the people of Alandur (about 97 %) wish to have the sewer connection, and would like to pay a reasonable amount for provision of the service: for connection-up to Rs 2000; for maintenance- Rs 21-50 per month as in the case of water supply.

Source: NIUA (2001)

Enabling Institutional Environment

The Tiruppur Water Supply and Sewerage Project (TWSSP), a public- private partnership initiative in urban water sector in India, was the first urban environment project in the country that has been structured on a commercially viable basis. The New Tiruppur Area Development Corporation Limited, a Special Purpose Vehicle (SPV) was created to undertake the water supply and sewerage scheme on a BOT basis. The project was designed to procure finances through a financing structure where the sole recourse to lenders and investors is the cash flow from the project. The project was targeted mainly

towards providing water supply to the Tiruppur hosiery industry. The development of the project however, has taken more than a decade and financial closure is still awaited.

With a view to promote public- private partnership (PPP) in municipal services, Municipal Administration and Water Supply Department of Government of Tamil Nadu recently has issued an order (GO NO. 69 dated 4 May 1998) with regard to privatization of municipal services. It contains the guidelines on PPP, and TNUIFSL has been designated as a nodal agency to make a generic document on various aspects of privatization. Significantly, the amended municipal act of Tamil Nadu (Tamil Nadu Urban Local Bodies Act, 1998) provided the policy environment for mainstreaming the urban environmental project financing and cost recovery initiatives in the state. PPP Guidelines are as follows:

- All the services opted for private participation should go through an open and competitive bidding process.
- There should not be retrenchment of the existing staff.
- The conditions of the contract should be clear.
- To create an open and healthy competition TNUIFSL will be requested to make a generic document for each aspect of privatization of the service.
- If necessary, the local administration can make changes in the generic document according to the local status.
- The cost of service delivery shall be such that there is no increase due to private sector participation

The GO also mentioned that the local body for capital investment in services could look at various options of private participation such as BOT, BOOT, etc. (NIUA 2001)

All the above initiatives encouraged the Alandur municipal administration to implement the underground sewerage scheme for the town through the PPP model. This project is however different from other conventional PPP projects as it also involved the community in financing the project, beside using private contractors for project designing and construction on BOT basis. It will serve as a model project in Tamil Nadu as well as India.

The main objective of any infrastructure project should be to provide the maximum benefits to the consumers with an eye on its commercial viability. Thus the most suitable PPP model is suppose to consider the legal, political and cultural environment of the city concerned along with institutional, financial and technical characteristics of the project. The contract arrangements with the private sector should also look into the benefits accruing from the implementation of the project, risks and securities, time frame, responsibilities of various stakeholders in project formulation and its implementation, role of beneficiaries, etc. Therefore, development of a PPP project is a complex and changing task for all the actors including state government, municipality and other agencies concerned. In case of Alandur sewerage project, all these issues have been addressed properly including the role and stake of the community. TNUIFSL took the responsibility of drafting and structuring the project, arranging for feasibility studies, formulating the contract and arranging the finances.

Project Cost and Funding Mechanism:

Initially, the cost of the project was estimated to be Rs 4531.30 lakh, which was later, revised to Rs 3378.37 lakh. The break-up of the final project cost according to major components is as follows:

Major components	Amount in lakh
Rs	

Sewer lines	1860.79
Pumping station	244.90
Pumping main	594.31
House service connections	225.00
Base cost	2925.00
Physical contingency (5%)	146.25
Price contingency (10%)	304.12
Capital cost	3375.37

Source: Alandur Municipality,

In order to finance the project, Alandur Municipality in consultation with TNUIFSL has raised funds from the following sources:

Sources of Finance	Amount in Rs Lakh .	
% to total		
<u>LOAN:</u>		
TUFIDO	1620.00	46.82
TNUIFSL	420.00	12.13
<u>GRANTS:</u>		
TUFIDO for supervision	100.00	
2.89		
GOT to bridge the gap	320.00	
9.24		
Deposit collection from public	800.00	23.12
Interest from deposits	200.00	5.78
TOTAL	3460.00	100.00

Source: Alandur Municipality, 2001

As against the total project cost of nearly Rs 3375 lakh, the municipality has raised funds amounting to over Rs 3400 lakh from various sources of finance including Tamil Nadu Urban Infrastructure Development Corporation (TUFIDO), Tamil Nadu Urban Infrastructure Finance Limited (TNUIFSL), the Government of Tamil Nadu (GOT) and citizens of Alandur. The disbursement of the loan amount is linked with stages of project development as defined in the loan agreement. Interestingly roughly 50 per cent of the total project cost by way of loan and grant is being financed from TUFIDCO alone. On loans it will carry an interest of only 5 per cent per annum with principal moratorium period of two years. The loan repayment period is eight years over moratorium the period. In case of the loan from TNUIFSL, it will carry an interest at the rate of 16 per cent per annum and a principal moratorium period is five years from the date of loan disbursement. The repayment period in this case is 15 years.

Regarding grants from the GOT and TUFIDCO, the Government of Tamil Nadu has agreed in principle to bridge the gap in the sewer account during the life of the project, after providing for operations and maintenance (O&M) expenses, debt servicing and contribution to the sinking fund. It is expected that the project would commence its commercial operation from 1 April 2002 and in the following years it may start generating surpluses in the revenue account,

after providing for O&M expenses. This surplus will be utilized for debt servicing. In addition to the above grant, GOT also agreed to pay a maximum amount of Rs 30 per month/ sewer connection in order to balance the revenue account budget of sewerage.

As no funds are available either with the municipality or with TNUIFSL to oversee and monitor the progress of the project, TUFIDCO has provided a special grant from the Tamil Nadu urban development grant fund for this purpose. This works out to be to nearly three per cent of the total project cost.

As a part of municipal input in the project, Alandur Municipality has decided to acquire land measuring about 0.5 hectare for construction of the sewerage treatment plant and pumping station by using its own sources. The cost of the land works out to be approximately Rs. 25 lakh at current prices.

Public Participation in the Project

Alandur sewerage project is a unique case of public participation in financing of the project. Unlike in water supply where the community is well informed about the advantages of a safe water delivery system, in case of sewerage the majority of the people are usually unaware about the impact of unhealthy sanitary conditions on their own health as well as on the environment of the settlement/city concerned. Therefore, collection of sewer charges and convincing the community to pay for it is a difficult and challenging task.

On the basis of a financial analysis of the project, Alandur Municipality decided vide its resolution nos. 229 and 234 of 28 July and 21 August 1998, respectively to collect one-time deposits in the form of connection charges from the citizens of Alandur. The connection charges for different categories of users are as follows:

-----**Category of users Amount to be paid (In Rs.)**

Domestic	5000 per house connection
Commercial	10000 per connection
Industrial	10000 per connection

Source: Alandur municipality

The municipality targeted to provide about 22 thousand connections both for domestic and non-domestic categories of users by the end of 2004-2005. As per rough estimates, it would yield an income (receipts) of nearly Rs 1300 lakh, which it proposes to be put into the revolving fund for repayment of loans to the lenders.

As the above connection charges on sewer were considered to be very high especially for domestic consumers, the GOT in consultation with TNIUFSL had suggested to the authorities of the Alandur Municipality to collect the connection deposits in two installments as per the convenience of the consumers. The local branch of the Punjab National Bank also offered financial support to the citizens of Alandur by creating a scheme for lending the connection deposit amount to them. However as the rate of interest on the scheme was quite high (14.1 %), it was reported that no one had availed this facility.

In addition to the above, it was also decided by the municipality to collect the sewer maintenance charges at the rate of Rs150 per month per connection from the domestic users, Rs450 per month per connection from commercial users and Rs750 per month from industrial users. The domestic monthly charges are proposed to be increased to 6 percent annually till they reach a level of Rs 180 per month. Similarly, the commercial and industrial maintenance charges are proposed to be increased by 6 per cent annually up to the level of Rs 540 and Rs 900 respectively. It may be mentioned that initially the municipality had proposed the tariff structure as per the above ceiling limits (level for different use), which was later reduced on

the basis of a willingness to pay (WTP) survey, discussion with the citizens, and officials concerned. As a compromise formula, the GOT is agreed to meet the excess of Rs 150 per house per month sewer charges as a grant to offset any deficit in the sewerage account equivalent to an amount not exceeding Rs 30 per month per connection.

It is interesting to note that in order to assess the commitment of the citizens of Alandur to the proposed sewerage scheme, the lending institutions including TNUDF and TNUIFSL have stipulated that the municipality should produce a proof of willingness to pay (WTP) by the consumers towards connection deposits and monthly maintenance charges before inviting tenders for the project. Subsequently, the Alandur Municipality issued a public notice in the local news papers as also through the cable network in order to create awareness among the public about the project and mentioned the amount to be paid by the connection seekers on account of deposits and monthly maintenance charges. This notice also contains the details with regard to advantages of the underground sewerage system, procedure of financing the project, cost of different project components, project phasing and payment procedure. To ensure transparency in the project financing mechanism, a separate bank account in the name of *Alandur Municipality Underground Sewerage Scheme (UGS)* was opened by the municipality in the Punjab National Bank. All the receipts of the project such as deposits, charges, and loans from lending institutions are to be remitted in this bank account. Similarly all the expenses related to the project are supposed to be paid from the UGS account. With a view to maintain strict financial discipline and transparency in the project, the Alandur Municipality appointed a special Committee comprising the Chairman and Commissioner of the municipality and three representatives from registered local Residents Welfare Associations to monitor the operations of the UGS account. Box 2 illustrates the public mobilization process in the Alandur sewerage project.

Box 2: Public Mobilization Process

Alandur sewerage project is a successful model of active public participation in the infrastructure services project. This credit goes to the dedicated team of the Alandur municipality comprising its Chairmen, Commissioner, councilors and staff. Charging for the service from the public especially for sewerage was a very difficult and challenging task. It was more critical in case of Alandur, given the fact that even consumers of the service in the neighborhood Chennai are not being charged for use of sewer and the only fees that they pay on account of provision of this service is the water and sewerage tax.

The municipality of Alandur for effective public participation in the project has adopted the following procedure:

- A detailed discussion was held among the officers and staff along with the Chairman about the sewerage project.
- All the holidays including Saturdays and Sundays were used for discussion with the residents welfare associations. During the discussions, the scheme was explained in detail: its advantages on the city environment and quality of life of the residents of Alandur.
- Residents were motivated through corner meetings and advertisements on the public transport system such as auto rickshaw, buses; cable network; local newspapers; distribution of pamphlets, etc. In addition, all the staff including sanitary workers earnestly carried out door-to-door canvassing of the benefits of the underground sewerage scheme.
- Willingness to pay survey was undertaken in 1997 in order to assess the affordability and willingness to pay by the residents of Alandur. Although, initially a sizeable population of the town was not ready to pay the high deposits on account of sewerage connection charges and monthly tariff, later through active canvassing and educating the people on the benefits of the project they agreed to pay the sewer charges as per the municipal tariff structure.
- As per information available, more than 13000 connection seekers (domestic and non-domestic) had deposited the one time connection fee to the municipality by the end of May 2000. It is impotent that in order to assess the commitment of the citizens of Alandur to the proposed sewerage scheme, the lending institutions including TNUDF and TNUFSL have stipulated that the municipality should collect deposits from at least 10000 residents before the award of work to the selected contractor. This will not only confirm effective public participation in the project but also

provide positive signals to the lending institutions on the sustainability of the project as also recovery of their investments. Accordingly, the municipality has started collecting one time deposits from the residents with effect from 30 October 1999, and is said to have completed the target before awarding the contract for the project to the selected contractor.

- In order to facilitate the collection procedure, the municipality has opened collection centers at different locations keeping in view the convenience of the residents. Arrangements were made for collection of deposits even on the receipt of phone messages and at the designated bank.
- With a view to inform the public on the progress of the project at various stages, as also to seek their opinion on different issues concerning the successful implementation of the project, the authorities of Alandur municipality use to call the meeting of representatives of welfare associations on a monthly basis, preferably the last Saturday or Sunday of the month. This procedure created a system of effective participation of the community in the project implementation process.

It may be mentioned that with a view to encourage the community to participate in such public health projects, the GOT recently initiated a scheme called *Namakku Naamae (we for ourselves)*, wherein each household was expected to contribute to supplement the investment made by the private sector in provision of health services. As provision of effective waste water and night soil disposal system is very much needed to maintain the health standards of the people, GOT has sanctioned a grant of Rs 3 crore on the basis of the above scheme to elicit public participation in implementing the underground sewerage system in all the urban areas of the state. Alandur is the first municipality in the state where the community has contributed in project financing.

Source: Alandur municipality and NIUA (2001).

Project Risks and Security Mechanism

Experience of infrastructure projects undertaken in various parts of the country show that cost escalation mainly due to time delay on account of a variety of reasons such as legal, regulatory, political and economic is the general phenomenon in this kind of

infrastructure works. In case of Alandur project, however, proper care has been taken in this regard. A project management consultant was appointed to oversee the physical and financial progress of the project in order to control the time delays and cost overruns. All the necessary clearance for the project works has been taken in advance from different agencies during the process of project development. Project finances were also arranged from major financial institutions as well as the public to ensure timely construction and implementation of the project.

In order to safeguard the interests of the lenders and the BOT operator, a security net was provided in the terms and conditions of loan agreement and the BOT contract. Whereas the lender's concern was with the timely repayment of the loans, the contractor's interest was confined to payment of his construction cost and the charges for the sewage treatment. TUFIDCO and TNUDF had stipulated that the entire revenue receipts including grants from the state government and collections on account of taxes, duties and user charges should be escrowed in favour of them in order to ensure timely repayment of loans. The Alandur municipality has already done this by creating a separate escrow account for the above purpose. Further more, the GOT agreed in principle, to provide gap funding to bridge any shortfall in payment of annuities and has also agreed in principle to meet the excess of Rs 150 per domestic connection per month on account of maintenance charges for the service in reference. Significantly, Alandur municipality cannot apply for any other term loan during the tenure of the current loan without the written approval from TNUDF and TUFIDCO. In a sense, till the full and final repayment of loans to the lending institutions by the municipality, it cannot enjoy freedom to spend as per its wishes. This would encourage the municipal authorities to search ways and means to generate additional revenues to clear their financial liabilities at an early date to enable them to use their cash flows as per their priorities.

Besides addressing the lender's risk, this project also provided a safeguard to the Engineering, Procurement and Construction (EPC) contractor as also the BOT contractor by way of a guarantee by the GOT through TNUFSL. In case of default in payment by the municipality to the contractor, the state government may stop the financial devolution in the form of grants and tax sharing to the municipality, and deduct an amount equal to the loan repayment and transfer the same to the contractor.

Project Progress as on March 2001

As per the available information, the project is being implemented successfully. Sewerage lines have been laid in 187 streets, and house service connections have been provided in 58 of them. All the civil works related to these service lines is complete. The following table will give the physical progress of the project.

Project work	Cumulative	
	Targets in km	Progress in km
Laying of sewer lines	27.7	27.8
Pumping main	2.575	2.325
Pump house	up to dome level	ground Floor Slab completed
STP	Aerator sidewall side Up to 3.5 meters progress	Concreting of aerator wall in progress
	PCC for Clarifier for progress	Excavation and PCC for Clarifier In
	PCC for Sludge drying Bed for road to STP in	Bund formation Approach

Source: TNUFSL (2001)

With regard to the financial progress of the project, it may be mentioned that the municipality has generated a sizeable amount of funds for project financing from different sources, including the connection deposits and loan from TUFIDCO. By March 2001, approximately Rs 916 lakh have been received from TUFIDCO in the form of grants and loan and more than Rs 684 lakh generated as a one-time sewer connection charge from about 13,434 households. As against this, roughly Rs755 lakh have been spent so far on various activities of the project including advances to contractors. Thus both the physical as well as financial progress of the project seems to be satisfactory.

Conclusions

While implementation of the project is yet to be completed, all indications are there that the approach of the Alandur municipality will lead to a sustainable outcome. This credit goes to all the players who participated in the project formulation, its designing and implementation process. The most important and challenging task in the project was to motivate the citizens of Alandur in the project financing process and convince the lending institutions, government officials, policy and decision makers and local councilors with regard to the need for a public-private participatory approach in such projects keeping in view the present financial environment in the country and more specifically the sustainability of the project. Authorities of the Alandur municipality must be congratulated for this initiative, which has demonstrated a more sustainable model to urban service delivery system. Besides an enabling policy environment in the state to promote public-private partnership in civic services, the success is also attributed to the active participation of key officials of the GOT, TNIUFSL, TNUDP and such other institutions. The involvement of these agencies in convincing the residents of the need and importance of this type of a project structure has gone a long way in the successful implementation of the project.

Furthermore, the security net provided in the project to the lenders as well as private contractors helped the municipality in accessing the finance for the project.

Regular monitoring and evaluation of the project by the key stakeholders including the community is, however, very important. Capacity building of municipal officials is also required in this regard to maintain such projects on a sustainable basis. People willingness and capacity to pay is required to be reviewed periodically with a transparent system on service financing mechanism. People are usually well informed about the project during its designing and construction stages, but they still need follow-up information on project management, especially on the issue concerning to its maintenance. This would facilitate a system through which consumers can be educated on the cost of the service, which in turn justifies the increase in tariff, if required at a later stage.

To sum up, Alandur sewerage project is an innovative attempt for sustainable delivery of urban services in the country. This kind of initiatives however, requires a strong political will and community support to managing and monitoring the contract with the private sector on a continuous basis.

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