

Case Study

**24X7 WATER SUPPLY
IN 3 CITIES OF KARNATAKA**

Water Supply

CASE OVERVIEW

Country: India

Centre/State/ULB: 29 select wards in three pilot cities of Gulbarga, Belgaum and Hubli-Dharwad, Karnataka

Sector: Urban Basic Services **Sub-Sector:** Water Supply

Award Date: April 2005

Type of concession: Performance based management contract. Project preparation (Stage I) and contracting out of construction (Stage II) within a period of 1 year 9 months followed by operation and maintenance (O&M) for 2 years

Stakeholders:

| | |
|------------------------------|---|
| Contracting Authority | Karnataka Urban Water Supply and Drainage Board (KUWSDB) Karnataka Urban Infrastructure Development Finance Company Limited (KUIDFC) Municipal administrations of Gulbarga, Belgaum and Hubli-Dharwad |
| Concessionaire | Joint Venture between Compagnie Generale Des Eaux (CGE) and Seureca |
| Oversight Arrangement | Concessioneing Authority through a technical auditor – Fichtner Consulting Engineers India Private Limited |

Present Status of Project: Initial stages were delayed and O&M began in mid 2008

PROJECT TIMELINE:

| | |
|----------------|---|
| 2000 | World Bank project (technical and financial assistance) for water supply and sewerage in northern districts of Karnataka, with KUIDFC as the nodal agency |
| 2002 | Initiation of the Karnataka Urban Water Sector Improvement Project (KUWASIP) |
| 2003-04 | Conduct of a two stage competitive bidding process |
| 2005 | Selection of Concessionaire and commencement of preparatory stage by the Concessionaire |
| 2008 | Completion of stages I and II and commencement of O&M stage |

1. PPP CONTEXT

1.1 ENABLING ENVIRONMENT

1. Constitution of the KUIDFC in 1993 as a public company with the mandate to assist Urban Local Bodies (ULBs) in the State for planning, financing and developing urban infrastructure. KUIDFC acts as the State nodal agency for anchoring externally aided projects in infrastructure.

2. Commencement of World Bank (WB) project (financial and technical assistance) in 2000, for addressing institutional/infrastructural deficiencies in the neglected northern districts of Karnataka – including a Water Supply and Sanitation Component. The project envisaged development of management contracts, wherein private operators would undertake planning, design and management of services in various ULBs in these districts. KUIDFC was the nodal agency for the project.
3. Initiation of the Karnataka Urban Water Sector Improvement Project (KUWASIP) by KUIDFC in 2002 under the WB programme, and decision to demonstrate 24X7 supply through a pilot project (Phase I) in three cities of Gulbarga, Belgaum and Hubli-Dharwad. The project was aligned with the strategies enunciated by the Urban Drinking Water and Sanitation Policy (2002) of the Government of Karnataka.
4. Amendment of the Karnataka Municipal Corporations Act in January 2005, making provisions for private sector participation in municipal water supply and allowing deputation of ULB employees to private companies in case of PPP projects.

1.2 SECTORAL CONTEXT

1. Coverage of water supply (average) in the 3 pilot cities was as low as 50%. Per capita consumption in Gulbarga was 46 litres/capita/day (LPCD) and that in the other 2 cities about 123 LPCD, as against the accepted standard of 135 LPCD.
2. Service reliability was low with average supply in the range of 2-6 hours of water supply once in 3-5 days
3. The system was also plagued with revenue losses due to lack of consumption-based billing, collection inefficiencies and dilapidation of existing supply systems leading to high operating costs.

2. PROJECT DEVELOPMENT

2.1 PROJECT CONCEPTUALIZATION

KUWASIP was to be piloted in select wards of 3 cities of Gulbarga, Belgaum and Hubli-Dharwad in Phase I and subsequently scaled up in Phase II to cover these cities entirely and include other cities.

Water sector PPPs typically present risks such as lack of adequate/accurate information regarding the existing systems leading to inaccurate investment and revenue forecasts. In order to de-risk the project for the private sector, the project was envisaged as a management contract – involving the private party from the preparatory stage itself and engaging their services for planning, contracting out of capital works and operation and maintenance (O&M) - without passing on the investment or revenue risk. Assets remained with the ULBs, Concessionaire was not responsible for investments or tariff fixation, and even during the O&M phase, the Concessionaire was to carry out operations through ULB staff deputed for the project period.

Role of the private sector was to demonstrate feasibility of 24X7 services in the pilot zones through the following stages:

1. Stage I: Conducting background studies, establish conditions and needs and developing an optimum 'Improvement plan'.
2. Stage II: Procurement of contractors for carrying out works as envisaged within the 'Improvement plan' and management of such contracts
3. Stage III: Conducting O&M of the new system

Capital Expenditure (Capex) permissible in Phase II was capped at Rs.42 Crore by the Concessioneing authority based on internal estimates of KUWSDB and actual availability of funds, setting a limit within which the Concessionaire was to suggest strategic improvements so as to achieve specific output targets.

2.2 PROJECT DEVELOPMENT

1. The project structure was formulated by KUIDFC, with assistance from the WB and detailed project development was conducted through a Transaction Advisor¹. A tariff design study for continuous water supply was carried out in the pilot cities and the tariff structure was reformed, replacing the prevalent system of flat rates with a consumption-based telescopic system.
2. A rigorous process of sensitization of users to the new tariff regime was undertaken through 'mock bills', which were served alongside the flat rate bills for a period of 6 months. Stakeholder workshops were also organized, attended by WB staff and senior officers from the Government of Karnataka and the KUIDFC

2.3 PROCUREMENT PROCEDURE

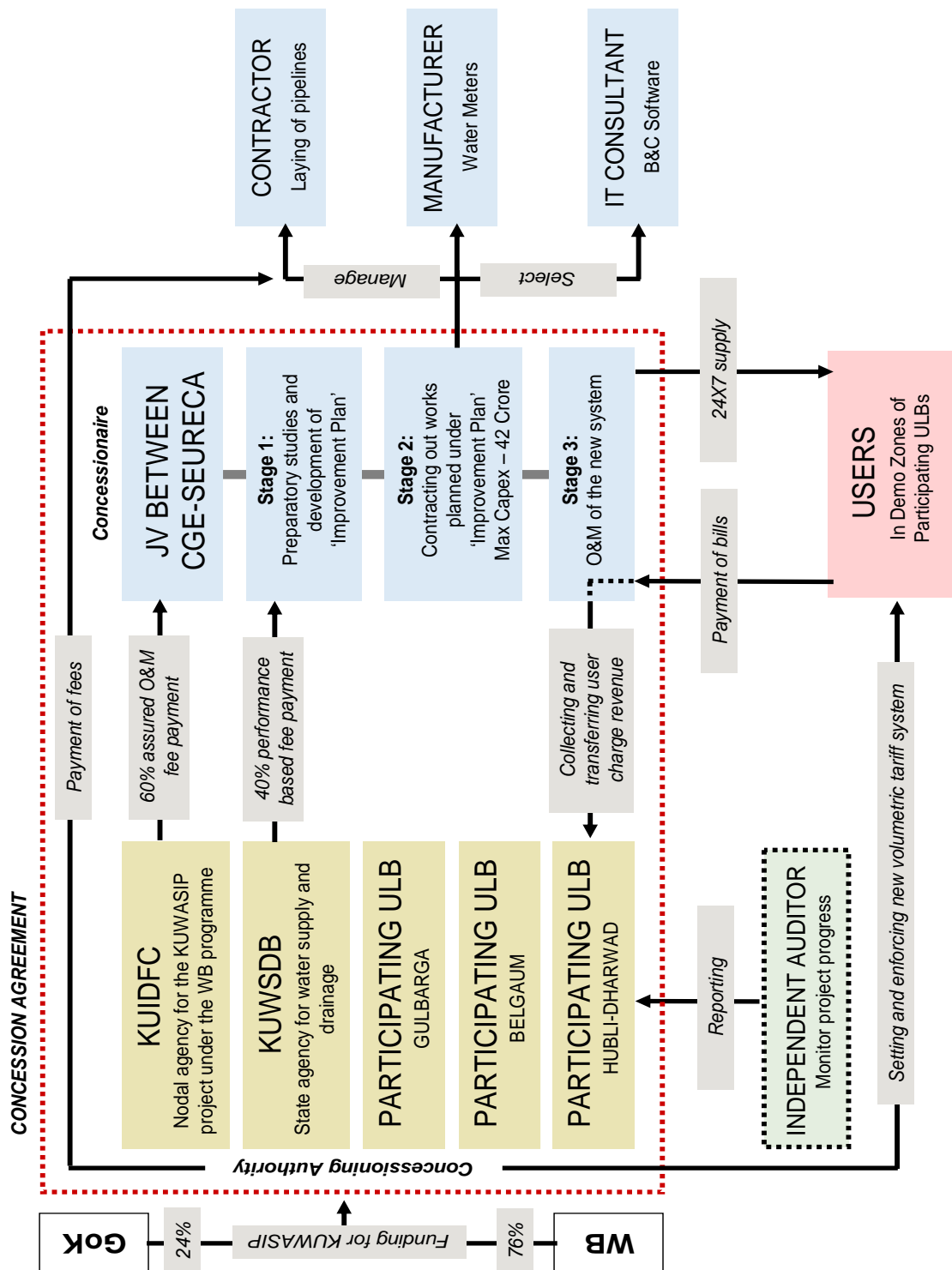
Procurement was based on a global competitive bid under the guidelines of the World Bank. A two stage bidding process (qualification followed by selection) was followed, with the lowest quote for O&M fee as the bid parameter. The project was awarded in February 2005 to a Joint Venture between Compagnie Generale Des Eaux and Seureca (both subsidiaries of Veolia Water) based on their quote of Rs.28 Crore (of which Rs.22.4 Crore was fixed remuneration and Rs.5.6 Crore was the maximum allowable bonus).

¹ Infrastructure Development Corporation (Karnataka) Limited (iDeCK)

3. CONTRACTUAL ARRANGEMENTS

3.1 PROPOSED CONTRACTUAL STRUCTURE

A single contract was signed for all three ULBs.



3.2 OPERATOR OUTPUT OBLIGATIONS

Implementation was structured into three stages of which the first two (preparation and construction) were to be completed within a period of 1 year and 9 months, followed by the third stage of O&M for a period of 2 years

| | |
|----------------------------------|---|
| <i>Preparatory Stage</i> | Undertaking all necessary surveys including topography study, door to door customer survey, demand estimation, network information and need identification. Preparation of an Improvement Plan for achieving the following targets (Capex not exceeding Rs.42 Crore): <ol style="list-style-type: none">1. Provision of continuous (24X7) water supply at adequate pressure2. Reduction of systemic water losses3. Metering and meter reading of all consumers4. Development of Billing and Collection (B&C) Software5. Development of customer database and provision of Customer Services |
| <i>Construction Stage</i> | Procurement of contractors for undertaking following works envisaged under the Improvement Plan and management of such works: <ol style="list-style-type: none">1. Selection of contractor for laying of pipelines and monitoring of the work2. Selection of manufacturer for Water meters and procurement of meters3. Selection of an IT consultant for development of B&C software and its installation |
| <i>O&M Stage</i> | Undertake O&M of the system and meet the following targets: <ol style="list-style-type: none">1. Ensuring 24X7 supply at adequate pressure to all connected properties and stand posts2. Emergency stoppages – not to exceed 12 hours and no more than 4 instances in a year3. Metering, meter reading and monthly billing of all consumers using B&C Software4. Collection of user charges from consumers5. Reduction of systemic water losses to 20 litres/connection/day within 2 years6. Address new connection requests and customer complaints within a specified period7. Repairing leaks appearing on the surface within 24 hours |

3.3 OBLIGATIONS OF THE CONCESSIONING AUTHORITY

The Concessioning Authority was responsible for all Capital and Operating Expenditure (Opex), timely hand over of infrastructure to the Concessionaire, deputation of ULB staff to the Operator and setting tariffs.

3.4 REGULATORY AND MONITORING ARRANGEMENTS

The project was monitored as per contract by KUWSDB and KUIDFC, through a technical auditor, M/s Fichtner Consulting Engineers India Private Limited, appointed for the purpose

3.5 PROJECT FINANCIALS

- 1) The Concessioneing Authority was responsible for all Capex (not exceeding Rs.42 Crore) and Opex. The project was funded partly by the WB (76%) and partly through State Government grants (24%). Revenue from user charges accrued directly to the ULBs (though collection was to be done by the Concessionaire)
- 2) The Concessionaire received payments in the form of O&M fees on a 'Performance based deferred payment system'. According to the system 60% of the fixed remuneration of Rs.22.4 Crore was paid as a guaranteed sum in 15 quarters and the remaining 40% was linked to achievement of project milestones.

3.6 PROJECT RISKS AND ALLOCATION

Investment Risk Borne by the Concessioneing Authority since it was responsible for all Capital and Operating Expenditure. However Capex was capped at Rs.42 Crore by the Concessioneing Authority

Operating Risk All design, construction, and operating risks were borne by the Concessionaire.

Performance risk Borne by the Concessionaire since 40% of the O&M fees were directly linked to achievement of specified outcomes. Penalties (maximum of 10%) were also included in the contract.

3.7 DISPUTES RESOLUTION MECHANISM

All disputes were to be resolved amicably through direct discussion between the parties involved. In the event of non resolution, the dispute was to be settled through arbitration processes as prescribed under the Arbitration and Conciliation Act, 1996.

4. PARTNERSHIP IN PRACTICE

With the successful implementation of the 24X7 in the demonstration zones, KUIDFC is now planning to upscale the system to cover all the remaining areas in the three ULBs on a PPP basis.

4.1 PROJECT OUTCOMES

SERVICE OUTPUTS

1. The project has achieved 24X7 water supply at adequate pressure for all connected households in the pilot areas. 24,400 connections have been established covering a population of about 1.79 lakhs. Public stand posts have been eliminated, with a few exceptions where their use is restricted to non-drinking purposes
2. Bulk supply and per capita consumption levels have improved in all 3 pilot cities:

| City | Bulk Supply in MLD | | Service Level (LPCD) | |
|---------|--------------------|------------------|----------------------|------------------|
| | Before Initiative | After Initiative | Before Initiative | After Initiative |
| Belgaum | 57 | 84 | 123 | 182 |

| | | | | |
|---------------|-----|-----|-----|-----|
| Gulbarga | 25 | 55 | 46 | 101 |
| Hubli-Dharwad | 111 | 113 | 123 | 125 |

- Water pressure has improved from 0-5m (inconsistent) to 6-22m. Increased pressure has eliminated the need for water pumps (in case of 2 storey houses) and storage, leading to cost savings for households.

OPERATIONS

- Water losses due to leakage have been reduced from as high as 50% in non-project zones to less than 10% within the demo zones. 100% metering has been completed and volumetric billing has led to reduction in water usage and wastage as was prevalent in the flat rate regime. This has led to substantial water savings for the KUWSDB and the surplus is now rerouted to other deficient areas.
- Many unauthorized connections have been authorized, and there is an increased demand from landlords for obtaining a separate connection for their tenants.
- Revenue for the ULBs through user charges has improved substantially with almost 90% convergence achieved between the quantity of water supplied and billed as of 2009.

USER INTERFACE

- Customer interface has improved substantially with reduction in response times and almost 100% redressal of complaints through a 24X7 customer service centre. A robust customer database has also been created and integrated with the B&C software.

URBAN POOR

- The tariff structure imposed under the project includes pro-poor considerations such as (i) no deposit for availing new connections in case of houses less than 600sq.ft in area (ii) minimum lifeline supply of 8000 litres per household and (iii) provision of water free-of-charge through public kiosks through involvement of NGOs and CBOs.

4.2 PROJECT SHORTCOMINGS

- The project was delayed (by more than a year) in Stage II which involved contracting out works as envisaged under the Improvement plan, primarily due to the detailed procurement specifications laid down by the World Bank
- The Project suffered initially due to public non acceptance. However this was addressed by KUIDFC and the World Bank, by undertaking systematic Information, Education and Communication activities (IEC).

4.3 LEGAL/CONTRACTUAL ISSUES

Following the delay in procurement processes during Stage II, the period of the concession had to be suitably extended to accommodate the delay. No other issues have emerged during project implementation.

5. LESSONS LEARNT

1. The case represents one of the more successful water sector PPPs in the country. A major reason for the success was the innovative risk allocation, wherein investment/revenue risks for the private sector were eliminated – thereby incentivizing private participation, and focusing more on the efficiencies brought in by the private sector as a management and O&M agency rather than the financing aspect of PPPs.
2. Remuneration mechanism can play an important role in ensuring project outcomes. In this case the performance based deferred payment system ensured that the PPP partner carried the system design and management risk, thereby ensuring quality of services rendered.
3. Proper project development also plays a crucial role in ensuring desired outcomes. In this case the adoption of a consumption based tariff system (standard for all users in the pilot zones) to complement the proposed continuous supply system not only makes the system financially sustainable for the ULB in the long run but will also curb wastage of water (further reducing system costs). Standardization will also help avoid the kind of tariff anomalies and inconsistencies encountered in the Buenos Aires Water Concessions (refer 4.2 of case study on Buenos Aires Water and Sewerage Concessions).
4. The role of proper IEC in achieving project outcomes cannot be understated. In this case the acceptance of the project by citizens and their willingness to pay as per the new tariff system was largely the result of extensive stakeholder discussions conducted by WB, Government of Karnataka and KUIDFC officials.