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WATER AND SANITATION FOR ALL: PARTNERSHIPS AND INNOVATIONS

Private sector participation in WATSAN services

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MANY RAPIDLY EXPANDING cities in low and lower middle income countries experience poor service coverage and inadequate water supplies and sanitation services. Municipalities or Water Utilities face a major challenge to improve services for their existing population and meet the demands arising from the high population growth. Cities in developing countries are expected to grow by 160 per cent during the period from 1990 – 2030 (Briscoe 1993). A key concern is usually finance. The consumers resist paying higher water tariffs because they receive unreliable services and private/public finance institutions will not lend money to improve those services until there is substantial increases in revenue from water tariffs - a 'vicious circle' is the result. This is represented in Figure 1 below. Investment in infrastructure as a proportion of GDP is expected to grow in many developing countries and Governments will not be able to meet this demand from their own resources. Clearly there is a need to attract funding from both public and private Financial Institutions. The question is how to move to a virtuous circle and provide better services to a greater number of customers?

Key mechanisms for change

In Figure 1 a two-way arrow is indicated between:

- Improving O&M (operation and maintenance) and Services.
- Higher tariffs and cost recovery.

This highlights the fact that these aspects are closely interdependent and both need to be addressed together in order to move towards sustainable management. The 'virtuous circle' entails improving O&M and services and raising tariffs in order to attract private/public sector finance and thus improve the infrastructure and service coverage, which then enables further improvements in the service to customers. In many water supply institutions substantial increases in tariff levels will be required before the private sector are willing to provide capital finance. To bring about the necessary changes, three key interrelated mechanisms have been found to be successful:

- Contracting out services or private sector participation (PSP).
- Commercialisation.
- Customer protection and regulation.

For most water utilities, it would be beneficial to use all three of these mechanisms to achieve the improvement of services to a greater number of customers. The main advantages of PSP are that it introduces private sector incentives and management skills, and acts as a catalyst for change. But thorough preparatory work and careful selection of the type of contract is required, if these advantages are to lead to substantial benefits.

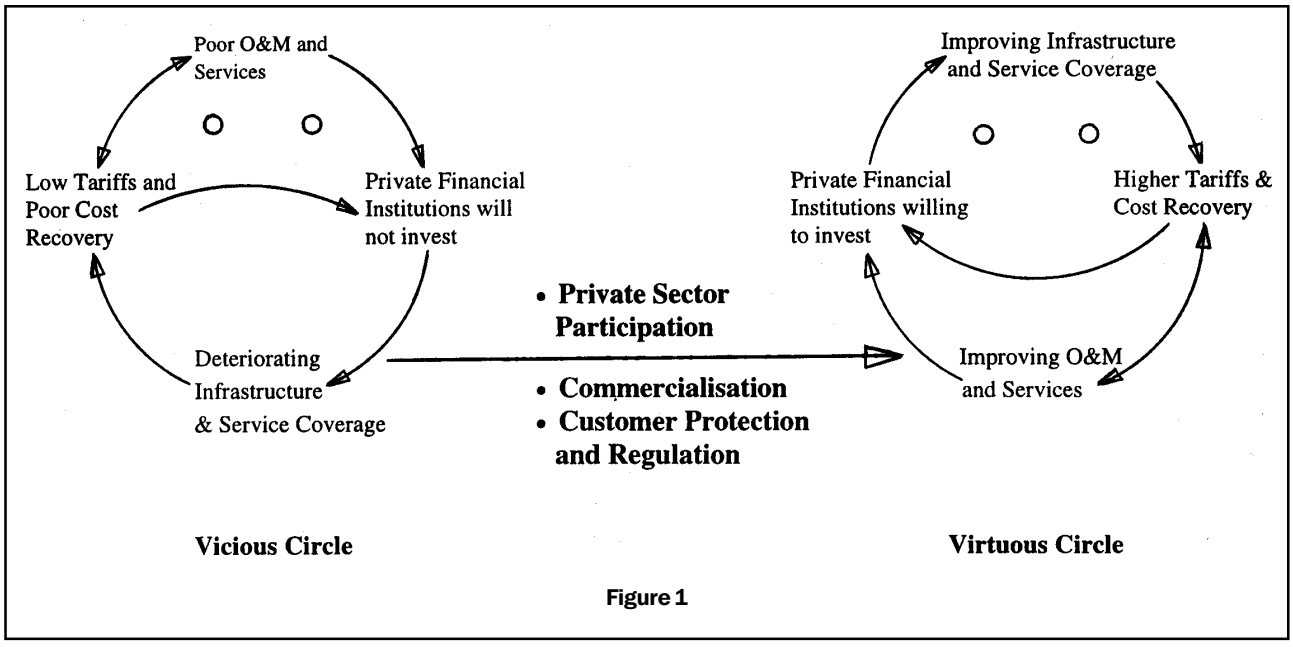

Figure 1

Types of PSP contracts

PSP contracts for infrastructure service provision have been conveniently categorised into a number of different types of contract that are briefly described below in order of increasing scope and complexity: Specific contracts can also be developed with features from two or more types of contract discussed.

Service Contracts are the simplest form of PSP whereby the public authority retains overall responsibility for operation and maintenance of the system, except for the specific system components that are contracted out. The Contractor's responsibility is limited to managing its own personnel and services efficiently. Typically, service contracts are used for maintenance of components such as pumping stations and meter reading. Payment is usually on a lump sum basis dependant on achieving certain agreed targets. A typical contract duration 1 – 3 years.

Management contracts are a more comprehensive arrangement, where the public authority transfers responsibility to a private contractor for the management of a range of activities such as the O&M of a water supply distribution system or major sub-system. Remuneration is usually based on a tendered fee plus an incentive based component, using parameters such as volume of water produced and improvements in bill collection rates. The public authority usually finances working and investment capital and determines cost recovery policies. A typical contract duration is for 3 to 5 years.

Lease contracts, also known as Affermage, are used where a private operator or lessor rents the facilities from a public authority and is responsible for operating and maintaining a complete system and collecting the tariffs. The lessor effectively buys the rights to the income stream from the utility's operations and thus assumes a significant share of the commercial risk associated with those operations. The lessor generally provides the working capital and the public authority deals with the capital investment. The duration of a Lease contract can be from 5 to 15 years.

BOT contracts, (Build, Operate and Transfer) is a form of Concession whereby a private firm or consortium agrees to finance, construct, operate and maintain a facility for a specific period, before transferring the facility to a Government or other public body. BOT arrangements are attractive for new plants that require large amounts of finance, for example, large water treatment plants, but they are not suitable for water distribution or wastewater collection systems. The contract period is normally greater than 20 years, sufficient for the private contractor to pay off loans and achieve a return on investment. These contracts often require high tariffs and/or subsidies to meet the BOT operators costs.

Concession contracts are very substantial in scope, where the private sector company takes on full responsibility not only for the O&M of the utility's assets, but also for investments, often for a whole city. Asset ownership remains with the Government. Frequently the concessions are bid according to price - the bidder who proposes to operate the utility and meet the specific investment and performance targets, for the lowest tariff, wins the concession. The contract, which is usually over a period of 25 - 30 years, sets out: the main performance targets, the mechanism by which prices can be adjusted over time and arrangements for arbitration of disputes between the project partners. Concessions generally require tariffs to be at a sufficiently high level at the start of the contract to meet the full costs of service provision.

Current PSP trends

Concession and BOT contracts are increasingly seen as beneficial means of attracting investment to the water sector. A number of these contracts are being implemented, particularly in South America, Francophone Africa and South East Asia. International private sector companies have been key participants in many of these projects.

Buenos Aires, Argentina: after the first year of a Concession Agreement for water and sewerage services in Buenos Aires, Argentina, improvements in service levels were already apparent. T he average time required to carry out repairs was reduced from 180 hours to 48 hours and water shortages during the summer months were reduced. Within two and half years the homes of an additional 570,000 of the city's inhabitants had been connected to the water system.

Tirupur, India: the successful textiles industry of this city in southern India currently receives all its water by tankers and the city dwellers only receive water once in two days. Tenders have been sought for an innovative BOT project that will provide reliable water and sewerage services to the industrial area and the city. A special purpose entity called the New Tirupur Area Development Corporation Limited (NTADCL) has been set up to implement the project and raise funds. The NTADCL will have equity participation from local industry, state and central government, the BOT operator and also

Infrastructure Leasing and Financial Services, who are a financial institution that has done much of the preparatory work in developing the project. It has been necessary for changes to be made in Government policy, to enable the scheme to go ahead. Progress on the project will be carefully observed in order to learn lessons that can be applied on similar projects elsewhere in India and thus increase private sector finance in the sector.

Lease contracts have been let as a means of introducing efficiency in a number of countries, such as Guinea, Senegal and Poland. Management contracts also offer improvements in efficiency with a degree of flexibility and have been introduced in countries such as Columbia and Trinidad and Tobago. Brief details of which are as follows:

Cartgena, Columbia: a joint public/private company, Acuacar, was created in 1995 to operate the city's water system under a 26 year Operation and Management Contract. Acuacar , who have no investment obligations, have achieved significant reductions in operating costs and improved bill collection rates (from 50 per cent to 82 per cent) during the first year of the contract.

Trinidad and Tobago: a three year Management Contract was awarded to a joint public/private company to manage the entire spectrum of water resources through to wastewater disposal in 1996. A Management contract was chosen because it provided the flexibility in a situation of poor information, undeveloped institutional arrangements and slow legislative arrangements. The contract has as its main objectives to improve customer service, to turn round the company in financial terms and to prepare for longer term PSP arrangements.

Service Contracts are becoming more popular in countries such as India where there have been difficulties in the raising of tariffs sufficiently high for more comprehensive forms of PSP. **Madras Metro Water Supply and Sanitation Board** has contracted out a variety of services including the O&M of sewage pumping stations. In 1993 the O&M of 14 sewage pumping stations was contracted out with savings of more than 20 per cent. Progressively more pumping stations have been contracted out and this year tenders have been sought for all 110 stations. Each contract covers 3 or 4 stations. Other services contracted out include the hiring of staff cars and water tankers, with significant savings achieved. In **Hyderabad** the staffing for the O&M of water treatment plants and a sewage treatment plant have been contracted out with similar savings. Service contracts have also been successfully let in **Ajmer in Rajasthan** for the O&M of pipelines, a water treatment plant and pumping stations. A key challenge is the development of typical contract formats and guidelines for the various contract options, to enable utilities to select and develop appropriate types of contract with a balance of risk sharing and incentives.

Development of sustainable private sector participation

In the selection of appropriate functions to be contracted out and the most suitable forms of contract, it is important to establish what has already been contracted out by the utility to date and what functions can be satisfactorily managed by the private sector in the country concerned; in order to determine future strategies with acceptable

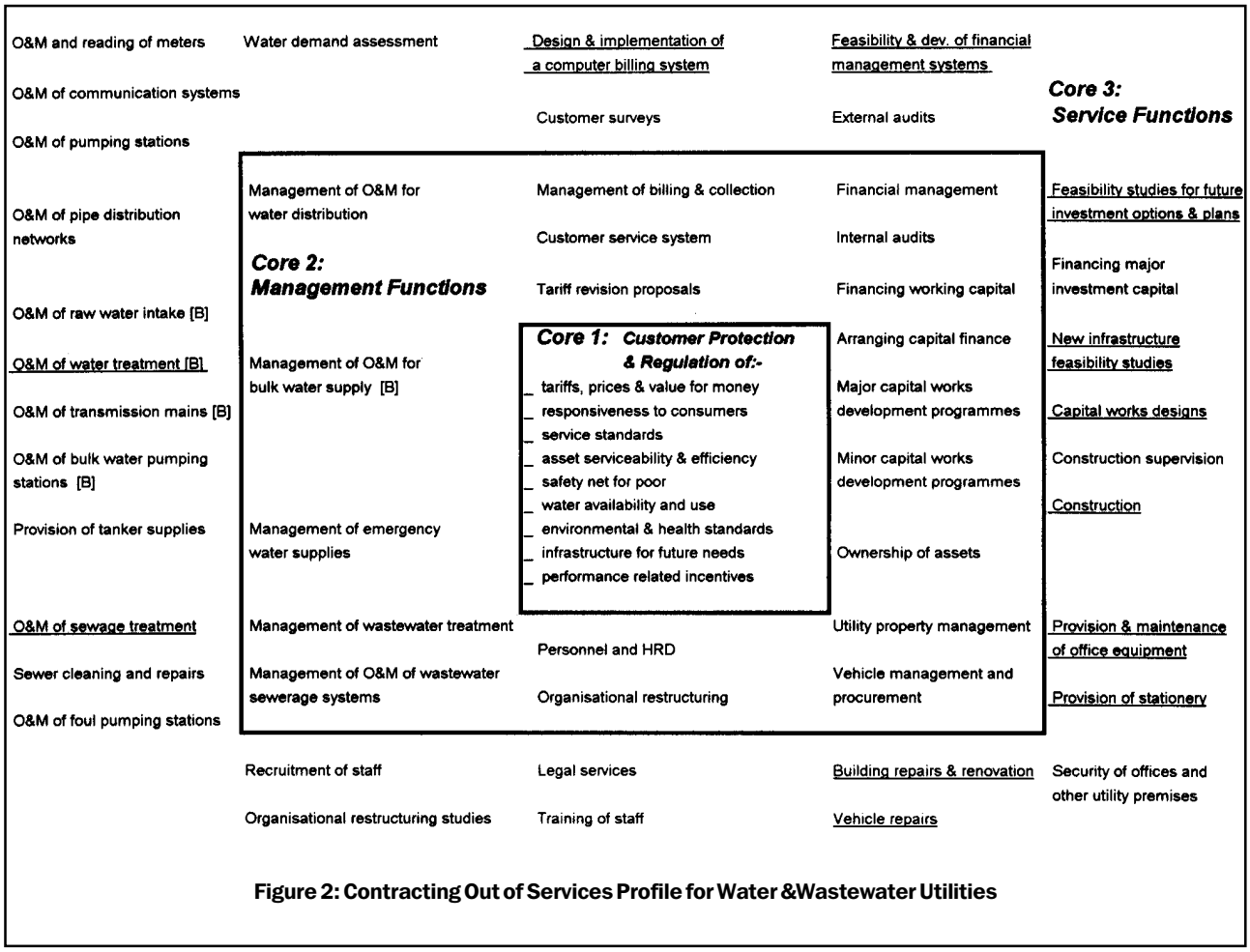

Figure 2: Contracting Out of Services Profile for Water &Wastewater Utilities

levels of risk. Figure 2 below is a Contracting Out of Services Profile for a typical utility, whose functions have been divided into 3 cores:

Core 1 - Customer protection and regulation functions
Core 2 - Management functions
Core 3 - Service functions

Core 1 functions cannot usually be contracted out and are the key regulatory responsibilities of Government. Core 3 contains the Service Functions which can be more easily contracted out. By way of an example in Figure 2, the functions that have been let to private contractors in a typical water supply institution in India, using mainly Service Contracts, have been underlined. Core 2 contains the management functions which when contracted out, offer the greater potential benefits, by introducing private sector incentives with sufficient scope to manage, provided that the regulatory issues have been adequately addressed. The functions that would be included in a BOT contract for a new water treatment plant and bulk supply are highlighted with a [B] in Figure 2. A concession contract would encompass all of the functions in cores 2 and 3, except the external audits and the ownership of assets, which is clearly a large undertaking, but offers substantial potential benefits. Concession, BOOT and Lease contracts require comprehensive consumer protection and regulatory arrangements, which are currently not in place in many developing countries. Services can be contracted out using Management or Service contracts, while such regulatory arrangements are being developed. Concession, BOOT and Lease contracts generally require high transaction costs and entail higher risks that need to be considered when a Water Utility is developing its PSP strategies.

If a utility is facing problems both with the level of service provided and raising tariffs sufficiently high to attract investment finance (refer to Figure 1 above), a more incremental learning approach should be considered, using Management, Service or Lease Contracts. Such contracts should be sufficiently large to allow private sector managers scope to innovate and make savings. Whichever solution is adopted, agreement is necessary on how risks are to be managed and the inclusion of adequate positive and negative incentives for the contractor to make improvements. When utilities have learnt lessons from their contracting out and the risks and benefits involved, they can consider using more comprehensive forms of PSP. In all cases Customer Protection and Regulation as well as Commercialisation issues should be addressed, if the desired improvements are to be achieved.

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Contracting-out water and sanitation services research project

The Water, Engineering and Development Centre, (WEDC) has commenced a research project entitled Contracting-Out Water and Sanitation Services, that is funded by the Department for International Development, UK. The purpose of the research is to enable water utilities to learn from each other *the extent* to which they are contracting out *what services with what benefits* and by *which contract approach*, in order to encourage further use of contracting out. The research includes two worldwide postal surveys with follow up field research. Key outputs from the research will be shared with participating organisations. If you are interested in further information or wish to participate in the research, please contact Kevin Sansom at WEDC, Loughborough University, Leicestershire., LE11 3TU, UK., tel: 0 44 1509 222617, fax: 0 44 1509 211079, Email: WEDC@lboro.ac.uk, WWW: http://info.lboro.ac.uk/departments/cv/wedc/index.html.