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SANITATION AND WATER FOR ALL

Implementation of private sector participation in Karachi

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THE POPULATION OF Karachi has grown from 400,000 in 1941 to about 13,000,000 in 1998 due to initial influx of refugees in 1947 and urban migration afterward. This required extensive growth and improvements in water and sewerage services within a short time period. Consequently, Government of Sindh (GoS) implemented infrastructure development and operational activities under various institutional arrangements, but for a variety of reasons, many of them fell short of fully addressing the growing needs of the city. GoS created Karachi Water and Sewerage Board (KWSB) in response to this situation in February 1983. With some success, notable efforts were made by GoS, with the support of multilateral lending agencies, to improve the technical and commercial position of KWSB. Despite this, water and sewerage services remain limited, and given the commercial prominence of Karachi in Pakistan, compare poorly in some respects with major cities in South and East Asia.

Background to PSP in KWSB

Service coverage for piped water is estimated to be about 66 per cent while for sewerage it is about 40 per cent. Most of the sewage does not receive treatment before its disposal into various water bodies. Physical losses of water are as high as 35 per cent. Revenue collection from retail customers is less than 40 per cent of the potential, although collection rates are about 90 per cent from bulk customers, which currently are the major source of revenue for KWSB.

Although most of the Karachi water supply and sewerage infrastructure is not old, it is generally inadequate to meet the current urban needs since its development has not kept pace with the city's growth, in addition, much of the existing infrastructure is poorly maintained and therefore not able to operate efficiently. Major operational improvements and investment are needed to upgrade the service levels for a population expanding at around 5 per cent per annum and likely to double over the next 20 years. Government believes that in order to simultaneously achieve the primary objectives of improving the level of service and reducing the government subsidy, engagement of private sector participation (PSP) in KWSB is essential. In 1995, GoS initiated a process of inducting the private sector into the provision of services currently provided by KWSB.

System constraints

Water supply

The total gross unconstrained demand for Karachi in 1996/97 is estimated at 595 mgd. Actual water supplies of 404 mgd are considerably less than this and represent a shortfall of about 191 mgd against the current demand. This has led to extensive water rationing enforced through rotational supply and contributed to low pressures throughout the system. It is estimated that at present, approximately 52 per cent of water supply is being distributed to domestic consumers and 13 per cent to non-domestic mainly industrial, commercial and agricultural consumers.

The conveyance of water from all sources involves pumping. System pressures are mainly controlled by 7 pumping stations and 12 reservoirs with a total capacity of 132 million gallons which is less than half a days supply and 22 per cent of the average daily demand. There are approximately 2630 km of pipes ranging in diameter between 760 mm and 3050 mm and 318 km with diameter more than 3050 mm. Due to system complexity and shortfall in water supply, pressures are generally low and pipes often flow part full. Due to high ground water levels and leakages, ground water inflows and contamination of water supply are common.

Sewerage

The sewerage system in Karachi is divided up into a number of catchments broadly following the hydrological boundaries of Malir and Lyari rivers. There are approximately 180 km of trunk sewers over 600 mm in diameter and 4620 km of sub-main and lateral sewers. In addition, there are about 70 km of rising mains and 18 pumping stations. Private housing societies and cantonments have their own reticulation systems, trunk sewers and pumping stations.

Currently, it is estimated that Karachi generates over 230 mgd of sewage from all sources. Most of the city population is not connected to trunk sewers. More than 50 per cent of trunk sewers are overloaded and, more significantly in most cases, the trunk sewers are extensively blocked due to poor maintenance and therefore much of the sewage overflows into surface drains and natural watercourses. Based on limited examination and available design drawings, it was reported in 1987 that 50 per cent of trunk sewers were under sized and were not expanded to match the growth of the city. Existing sewage treatment facilities and associated pumping stations are undersized with a total theoretical capacity of 141 mgd for primary treatment and limited biological treatment of less that 60 per cent of the flow.

The 1987 study developed a master plan for the development of the sewerage system. This included 16 activities ranging from sewer mapping, revenue generation and maintenance training to the phased construction of trunk

sewers, rehabilitation and upgrading of the three existing treatment plants and the construction of four new treatment plants. A first stage programme was developed as an immediate action plan. In fact, progress on this has been slow due to paucity of funds and construction delays.

Financial position

Revenue collection by KWSB has been poor; only 162,000 of 700,000 billed registered consumers (23 per cent) paid in 1996/97, however this yielded approximately 60 per cent of total potential revenue. Additionally, approximately 100,000 consumers are connected but not billed and a significant number of consumers are supplied water from private tankers who obtain water either from KWSB hydrants or from other informal sources. Tariff levels, although recently increased, are low by international standards and even in comparison with other cities in Pakistan. The willingness-to-pay of consumers is judged to be high based on current rates for private tanker delivery, similarly the current tariffs are well within the generally accepted affordability threshold of 4 per cent of household income.

Following two years of labour reduction, billing and revenue improvement along with improvements in financial management, in 1996/7 the operating costs for KWSB were Rs 1619 million (US $40 million). Revenues from water and conservancy charges were almost equal to operating expenses. Subsidies from KMC amounted to an additional 14 per cent of operating expenses. After accounting for debt servicing and excluding any new capital expenditures, KWSB managed to just break even. Staff costs (37 per cent) and electricity costs (25 per cent) are a large component of the operating costs. Under these existing financial circumstances, there is little scope for the KWSB to embark on a program of capital expenditures.

Consumer perception

Consumer perception of KWSB is generally poor, irregularity and inequity in water supply and distribution have contributed to dissatisfaction. With little water to go around, perceived inequities in tanker supply contribute further to this view. Unnecessary political interference in decision-making and daily operations contributes significantly to management problems and further accentuates inequities of supply. There is a well established competing private tanker service which supply water of variable, and often unacceptable, quality at high prices to individual, corporate and institutional customers. This is perceived by many as a necessary although not desirable alternative.

The educated middle class has a significantly negative perception of environmental degradation caused by discharges of untreated sewage into water bodies. In addition, deteriorating urban environment is giving rise to even wider spread concern and is becoming a significant political issue.

Planning for PSP

In December 1994, KWSB and the World Bank developed an ambitious Action Plan for financial and institutional reform of KWSB. The Plan was intended to streamline KWSB's operation, improve revenue collection, increase consumer base, rationalise tariffs and improve financial control. In addition, the Plan envisaged institutional reform by inducting private sector into the operation of KWSB in the most effective way.

The principal forces for change in KWSB are *inter alia:* shortfalls in water supply; inequity in water access; large operating losses; and difficulties in securing the required capital for infrastructure development and improvement. The primary objective of implementing PSP is to significantly improve water supply and sewerage services for the citizens of Karachi. Pragmatic targets for meeting this objective are estimated to require a capital expenditure of in excess of US$ 5.0 billion over the next 25 years.

Progress to date

In June 1996, consultants were appointed under a World Bank Technical Assistance to assist in the preparation and implementation of PSP in KWSB. The assignment consists of three distinct phases: development of the most appropriate strategy for PSP; execution of the preparatory work for PSP; and implementation of the agreed programme.

Strategy for private sector participation

The PSP strategy, approved by GoS in June 1997, is designed to ensure that the ownership of assets remains in the public sector while the technical, commercial and financial needs of the system become the responsibility of the private operator. The PSP strategy also ensures that the benefits of system improvement are devolved to the greatest number of customers. The success of the strategy hinges on passing executive responsibility to the private operator on the basis of a single 25 year concession contract for the operation, management, improvement and expansion of the water supply and sewerage system of KWSB.

The concession contract makes the private operator responsible for all future capital investment required to maintain and improve the system during the currency of the concession contract. The chosen concession period of 25 years is intended to ensure a long term commitment from the operator, however, since the base position of the existing system is not well defined, a provision has been set for re-evaluating performance targets at the end of year 5.

Detailed feasibility of the concession type contract

The second phase of the project, which will be completed shortly, includes a detailed technical and financial feasibility evaluation of the concession contract. Technical evaluation is based on modelling of capital and operating expenditure associated with various scenarios for service improvement and system development over the life of the concession. Linked to this is a financial model which assesses the implications of these projections of expenditure on the financial viability of the contract measured ultimately in terms of profitability or return on equity. The

financial model is based on a variety of assumptions regarding project financing in terms of commercial debt, confessional debt, guaranteed debt and equity. The feasibility study will be used to set the benchmarks and performance targets that ultimately define the obligations of the operator and will form the basis of the bidding document.

Legislation and regulatory framework

A legal and regulatory framework has also been developed which is necessary for the induction of a private operator. The proposed legislation is intended to enable the induction of a private operator into the provision of water and sewerage services, to define the role and powers of the regulator and of Government and the rights of customers along with the measures for their enforcement. The legal framework lays out the transitional arrangements relating to labour and current commitments of KWSB for an interim period prior to full handover to the concessionaire. The proposed structure of legal and regulatory environment contains a series of enterprises with six distinct roles or activities. The six institutions responsible for the regulation (but not the control) of the water sector will be:

i) *The Water Commission* , chaired by the Executive Chairman, to issue licenses for the abstraction of water [surface and subsurface] used for financial or material gain, monitor standards of water quality, service and operation, advise Government on matters relating to the service of Enforcement, Variation or Termination Notices, upon the Appointee and review recommendations to amend the Instrument, protect consumers against market abuse and settle consumers' grievances.
ii) A *Consumer Consultative Committee,* comprising of concerned citizens under the chairmanship of Mayor KMC, to ensure that views of consumers are considered by the operator in its planning for annual business and capital investments.
iii) *The Corporate Law Authority* to ensure that requirements prescribed by the Companies Ordinance, such as the appointment of financial auditors, or of Receivers or Liquidators are met.
iv) The *Technical Standards Committee* to advise the Water Commission on the selection and approval of technical standards in respect of the manufacture, or construction or use of specific materials. The Water Commission will have discretionary powers to make regulations whereby such standards shall become mandatory.
v) *The Sindh Environmental Protection Agency* to enforce the prescribed sewage (municipal) effluent (which include trade or industrial effluents) standards.
vi) *The Karachi Metropolitan Corporation* to enforce Public Health and of the Road's management regulations.

The proposed regulatory framework will create an autonomous regulator charged with impartially protecting the interests of consumers, the operator and the Government.

Marketing

There are only a handful of world class operators who have ventured into the market for privatization or other forms of PSP in water and sewerage utilities around the world. Following the successes of PSP initiatives in Britain, South America and Far East, more and more countries are opting for this approach to cope with their overstretched and under-funded municipal services. Although many different models of PSP are being tested ranging from management contracts to outright privatization, the concession type of contract is favoured widely in the sector and has been the basis used in Argentina, the Phillippines, Indonesia, Ghana and Mozambique.

The small number of potential operators, the growing number of opportunities and the high cost of bidding - estimated to be between one and over two million dollars - strictly limits the capacity of the market to focus on more than a few opportunities at any given time. It is therefore critical to develop market interest and to judiciously select the timing of a transaction to ensure maximum market response.

An extensive marketing programme has been carried out to develop market interest and build up the profile of the project. This has included meetings, discussions, and publication of a detailed information brochure for potential international operators. A number of high level meetings have taken place between GoS/KWSB officials and potential operators both in Karachi and in Europe. This has led to a high level of interest in the market.

An advertisement was placed in the international press for applications for pre-qualification of interested operators meeting stringent criteria in terms of size and experience in October 1997. Seven of the world's leading operators responded to this and have now been prequalified. All the operators have been afforded access to a Commercial Consultation Centre in Karachi to commence their due diligence.

Public awareness campaign

Water is a unique communal resource essential to life. Commercialisation of the provision of this essential need generates strong and persistent fears and misconceptions which can range from simple apprehensions regarding increases in tariffs and water charges among ordinary consumers to concerns touching issues of national security and sovereignty. These are in part compounded by widespread public perception of irregularities associated with privatisation transactions, including non-transparency and hasty sell-outs to meet short term goals. The challenge therefore lies in mitigating these misconceptions and fears while bringing the true agenda of privatising water utilities to the fore.

In order to publicise and develop a broad based consensus on the need for implementing PSP in KWSB, an intensive media campaign has been carried out. This included meetings, debates, seminars, workshops, question-answer sessions, articles and letters to the Editors in leading

newspapers, press note, briefing of journalists, dialogue with NGOs and trade unions and circulation of brochures to all KWSB consumers. Print and electronic media have given exhaustive coverage to various developments, covering almost all aspects of PSP in KWSB. During the public awareness campaign, efforts have been made to ensure accurate and impartial information is made available on proposed PSP strategies.

The role of Government

It has been recognized from the outset that Government has key role to play in this ongoing process. Firstly, clear and effective commitment from all levels of Government backed by a strong political will are a prerequisite for its success. Experience all over the world has shown that the implementation of PSP projects is accompanied by uncertainty and mistrust among stakeholders since it engenders a fundamental change in organizations and relationships. Clear messages from Government are absolutely essential for developing widespread awareness amongst labour, customers and government functionaries. Well coordinated, unequivocal, timely and transparent actions are the clearest expression of Government commitment for all parties including the private sector.

In addition to its overt commitment Government must take certain fundamental steps to attract private investment. These steps include providing legal protection to all parties; establishing an autonomous regulatory authority; enabling tariff increases and easing capital movement; and sharing commercial risk where necessary. Any PSP project must be viewed as a partnership in which each of the partners shares those risks that it is best able to manage in the interest of ensuring that the customer obtains the best value for money. Typically Governments share risks by providing for political, legislative, force majeure and currency risk, guaranteeing the contractual obligations of its own entities and guaranteeing buy out provisions for the private operator. In this context, it is then reasonable for the private operator to take normal commercial risks such a bidding risk, market risk including revenue and construction risks for infrastructure investments.

Under the constitution of Pakistan, water supply and wastewater are a provincial subject, the principal responsibility for the PSP project, therefore, rests with the GoS. Accordingly, the GoS has taken many steps to promote PSP including clearly stating its commitment to the principle of private sector participation over the last three years and committing to specific measures such as planned tariff increases. Consistent support has been expressed by politicians from all parties. In addition, it is proposed that a bill enabling PSP will be presented in the Provincial Assembly soon. The proposed Sindh Water Act will establish a regulatory authority and mechanism for regulation of the provision of water and sewerage services in Karachi.

The concession contract for PSP in KWSB will most likely be between the GoS and a private operating company. The essence of an equitable and efficient PSP contract is that each party to the Contract should assume those risks that it is best qualified to handle. It is likely that many of the areas of risk that the GoS will be called on to adopt will fall into the category of "sovereign" risk. These may include country, political, currency and force majeure risks, i.e. risks that a provincial government cannot manage or reasonably hedge against without the support of the Federal Government. In this case, the Federal Government will need to back or counter-guarantee the commitments of the GoS. Risk sharing may also take the form of giving the operator access to confessional financing or partial risk guarantees - in many cases the availability of such financing is critical to the financial viability of a project. Generally, only a sovereign government can make available confessional financing or partial risk guarantees provided by multi- or bi-lateral agencies and in this key area, the participation of the Federal Government is also considered to be necessary.

In its recent Investment policy, the Federal Government has recognised water supply and sewerage as a priority industry. This and other investment-friendly policies will undoubtedly support the process of PSP by providing financial incentives and allowing the free movement of capital. However there may still be a need for the GoP to assume specific sovereign risks, as outlined above, to ensure the success of the project.

Lessons learned

A high level of interest has been generated among the leading operators and the market is considered ready for bidding for a concession contract. The lessons emerging from the process so far are:

- Government commitment is essential to the PSP process;
- The privatisation of water and sewerage service provision raises unique misconceptions and fears and it is essential to recognise these and put in place mitigation measures from the outset;
- Awareness through free access to information, informed debate and complete transparency is imperative to develop a sense of ownership;
- A well thought out and carefully developed strategy for PSP together with careful marketing can generate a high level of market interest; and
- It is essential that the Federal Government is involved in the early stages of privatization and provides sovereign support to PSP.

The way forward

It is planned that a private operator will be appointed to operate water and sewerage services within the domain of KWSB under a concession type contract by the end of this year. The appointment will be through a transparent and fair process of competitive bidding, giving all bidders an equal chance of winning and ensuring the maximum of competition. In preparation for this, the Sindh Water Act

will be enacted, regulator will in place and the mechanisms for GoS and GoP to participate in risk sharing will be set up. The public awareness campaign and the continued participation of the citizens of Karachi will be maintained throughout this process.

The involvement of the private sector in the urban water and sanitation sector is being considered for many of Pakistan's large cities. Since there are few world-class operators who have international experience in the water and wastewater business, it is very important for the first and largest such initiative in Karachi to be executed successfully since this will develop investor confidence and interest. Failure on the other hand would seriously damage the credibility of other initiatives.

It is essential for the success of this and future similar initiatives that all possible support is provided to this ongoing process and that involvement of all stakeholders is ensured at all stages throughout the process.

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