

# DEPARTMENT FOR INTERNATIONAL DEVELOPMENT

## Occasional Paper No 3

### PRIVATE SECTOR PARTICIPATION IN THE WATER AND SANITATION SECTOR

'PRIVATE WATERS? - A BIAS TOWARDS THE POOR'

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## EXECUTIVE SUMMARY

The long term need for effective, equitable and efficient water supply and sanitation in developing countries is not being adequately provided by government institutions. Increased Private Sector Participation (PSP) is seen as an important element in achieving public health benefits for all as well as convenience benefits for those who can afford them.

Private sector participation is seen to increase efficiency and introduce new sources of finance but above all to require a new emphasis on proactive, performance oriented, commercial management that aims to match the demand of its customers with their willingness to pay realistic charges and tariffs.

Private Sector Participation is not a panacea to overcome the common problems of inappropriate technology demanding unsustainable institutional support for which consumers are not expected to pay realistic tariffs.

To achieve the benefits of PSP, the different categories of the 'private' sector, from artisans, NGO's and small contractors through leasing contracts to international concessions have to be effectively matched to the different target groups of the sector: low-income and middle-income rural water supply and rural sanitation, secondary towns, peri-urban and metropolitan water supply and sanitation.

Considering the most urgent needs for public health benefits it is proposed that development agencies need to focus upon the lower income groups who generally require a multitude of small-scale PSP interventions. The resulting focus on small businesses is also likely to generate higher economic benefits in an area.

This strategy is not as straightforward as supporting the relatively few major international concessions in metropolitan areas but will do more to improve the quality of life for the majority of people in poorer countries.

# 1. Introduction

This paper aims to provide an overview of the principles that should underlay private sector participation in the water and sanitation sub-sector to help inform DFID, together with other stakeholders, on the role and potential of Private Sector Participation (PSP) in its broadest sense and to provide suggestions on what approaches might be appropriate to DFID's programmes and those of others in low and lower-middle income countries.

Following on from the DFID position paper on water resources policy (Winpenny, 1996) this paper examines the urban and rural drinking water supply and sanitation sub-sector which utilises some of those water resources. It is estimated that 91% of total water consumption (in developing countries) is used in agriculture and therefore fears over future water scarcity have overwhelming relevance, at the sectoral level, to the irrigation sector. There is consequently an urgent need to consider the pricing of irrigation water as an economic good to protect the higher value supply to drinking water.

Improved delivery of drinking water and sanitation is vital for health, necessary for development and desired for convenience. Drinking water is used domestically primarily for drinking, cooking, washing and bathing. Where sewerage is installed and functioning half as much again is used for transporting domestic human waste. Drinking water is also used by commerce and industry, at 6% of total water use an amount double that used domestically. Sanitation is required for safe, hygienic disposal of waste, in this paper focusing upon the disposal of human waste and liquid waste.

This paper considers how PSP can assist in the provision of effective, equitable and efficient water and sanitation, particularly to the lower-income groups within the low and middle-income countries, having an average GNP per capita ranging from \$100 to \$2,500 per annum. The level of potential affordability and willingness to pay suggested by these overall figures is a vital determinant in both the technology of water and sanitation and in the institutional support required for sustainability.

Water and sanitation can be described as 'public, merit goods', meeting basic needs with general benefits for all in terms of public health but also as 'private goods' with excludable benefits which are desired for convenience and for commercial/ industrial use as a basic resource.

The merit good argument has led to comprehensive government support to the sector which has often proved difficult to balance with the household's demand for the private good. Governments and their agencies, with considerable donor support, have tended to over-emphasise their responsibility to provide water for health through their investment programmes in the urban areas (by the use of subsidised 'norms' at, for example, 120 litres per capita day (lpcd) when public health needs are nearer 20 lpcd), which in practice has oversupplied water and sanitation for the convenience of the higher-income groups.

## **Box 1. Subsidies in Chile**

Even as a merit good, water does not need to be publicly supplied, it can be publicly subsidised. In Chile the water company charges a special low rate to people who are registered as poor and this subsidy is reimbursed by the municipality who holds the register of the poor.

Engineers, the principal profession involved, have accepted the public goods model by delivering a subsidised capital, engineering administration approach which has resulted in high operating costs. These costs, deemed to be unaffordable, have led to further government subsidies. In practice, the systems have often been affordable by those who actually receive the services but might be less affordable by those who are meant to be receiving health benefits. The subsidies have been absorbed by the higher-income groups. The population who receive this improved water supply agree that it is a basic life-giving need which 'is a gift of god and nature' for which nobody should pay - and so they acquiesce with the politicians who want to keep tariffs low as a symbolic political gesture.

**Box 2. Willingness to pay in Sri Lanka**

In a recent survey in urban Sri Lanka, of those households with mains water, paying on average \$0.80 per month, 80% refused to consider paying \$1.20 per month to 'guarantee a 24 hour, full pressure mains supply'. Of those who do not have mains supply (predominantly using household wells), 57% declared a willingness to pay \$1 per month and 42% to pay \$2 per month. *Source: Aturupane & Franceys, 1997*

The system has evolved to suit the needs of many stakeholders, including the politicians, but not the lower-income groups who often do not receive urban piped water because 'there is no funding available' or because 'they will not pay'. The result is that the poor pay through vendors many times more per unit of water than the rich (median value of 12 times more, ranging from 4 to 100 time more (Bhatia and Falkenmark, 1992)) and are thus unable to afford to buy enough to receive the desired health benefits. Although presently too expensive, the vendors have begun to show the way forward in that their private sector participation is profitably meeting a demand for water. It is often the private sector that is already serving the poor because of the failure of the public sector.

In rural areas there have been countless high cost failures in the use of inappropriate technology, over engineered and over supplied without regard to actual demand and willingness to pay. Although much progress has been made in redirecting projects there remains the temptation to start building regional schemes, which demand 'real' engineering expertise at the expense of discreet systems which the beneficiaries can manage themselves with the support of private suppliers.

**Box 3. Water investment in Sri Lanka**

In Sri Lanka proposals for new investments average \$61 per capita in the Western Region (including the capital, Colombo) which already has the highest existing coverage of 73% whereas per capita investments in Southern Region, for example, are proposed at \$8 per capita which presently has 47% coverage. *Source: NCP, 1995*

The urgent health need for sanitation again tempts the engineers who know from training and inclination that the solution is sewerage - expensive pipes and treatment works and more contracts to construct them. Sewerage is an appropriate solution for sanitation needs in the commercial core of a high density city, or for industrial zones. However, for the majority of any population, it is likely to cost more than the alternative of septic tanks (where there is piped water supply) and many times more than improved latrines (where there is limited water supply). However, such alternative solutions reduce the need for contracts and construction and so are deemed to be unhygienic and 'damaging to the environment and groundwater'. The sewerage networks which are built, because of their expense, are limited to the higher income parts of the city. It is then necessary to charge high connection fees (though usually minimal tariffs) for which there is considerable unwillingness to pay (even from the 'rich') leading to low connection rates and on occasion failure of the systems. In the rural areas, even many low cost sanitation systems are 'over-engineered' which then require subsidies for construction and demand continuing external involvement.

The present situation may be characterised as a 'supply led' poor quality service from high cost infrastructure which is just about sufficient to meet the needs of the decision-makers and the higher-income consumers. In addition it satisfies the 'utilities' or rural development departments in their staff needs for employment, income-earning opportunities and 'professional fulfillment'. However the providers have tended to lose sight of their objective, to supply basic needs water and sanitation for health to all (only a modest amount of provision required) and to provide a customer service of larger quantities and more convenient delivery to those who are willing to pay the cost.

Private Sector Participation is not a panacea to overcome these problems of inappropriate technology demanding unsustainable institutional support for which consumers are not expected to pay. However to the extent to which so much investment results in supplying water and sanitation for convenience it is absolutely correct for the private sector to be substantially involved in supplying this 'private good'. When the private sector is meeting the basic needs public health demand of the lowest-income groups (through vendors at unacceptable cost) and the public sector is meeting the convenience needs of the higher income groups (at well below cost) the situation demands change. The corollary is that if the major part of the supply is for convenience then that should be paid for by the consumers at a realistic price. For overall, the

weakness in operations and maintenance of water and sanitation has been aggravated by the problem of inadequate tariffs. The effective price charged for urban water is only about 35% of the average cost of supplying it (World Bank, 1992). The rich may also benefit by receiving high quality sanitation in the form of sewerage, usually at minimal price, whilst the poor are expected to pay for their improved latrines.

It can be argued that where tariffs are at a realistic level there is little shortage of funding for capital works, though it is acknowledged that tariffs have to be realistic in terms of willingness to pay as well as cost coverage. If there is not sufficient willingness to pay (or political preparedness to support viable tariffs) then the private sector will be unable to help except through limited efficiency gains in services contracts. Most governments do not have funds to pay the private sector subsidies to run urban water supply and sewerage systems. But the consumers generally have the resources to pay realistic tariffs (with lifeline blocks where appropriate) as proved by the use of expensive vendors. Therefore tariff policy has to be addressed before any significant private sector participation is considered.

## 2. The Objective

To ensure that service coverage is improved through PSP or any other approach requires a clearer focus on the objectives of the sub-sector. The goal is to deliver water supply and sanitation services that ensure health benefits and that beneficiaries are willing to pay for. Support for the sector remains vital as the public health benefits are very real. Improved water supply and sanitation leads to: a 22% median reduction in annual incidence of diarrhea, 28% reduction in prevalence of Ascariasis, 76% in Guinea worm and 73% reduction in prevalence of Schistosomiasis (Esrey et al, 1991). The requirement is to bring the sector back into balance with the appropriate organisations meeting the relevant needs.

To achieve these aims the sector has tried with some success in the rural areas to focus on the social and institutional needs through community management and on technology through the intermediate/appropriate technology approach. In the urban areas (apart from occasional on-plot sanitation systems for the poor) it has been assumed that the government owned utility with conventional engineering is the only solution. Capacity building in the urban utilities has been attempted with institutional development programmes which have proved their worth during the lifetime of a project (or a particular leader) but have generally not achieved the break-through into self-sustaining growth.

To achieve the agreed objectives the sector, particularly in the urban areas, now needs performance oriented management, changing from the 'social welfare' engineering provision approach to a commercialised 'marketing' of a customer service approach. Freedom for managers to manage demand driven services (which includes viable tariffs but should not include the freedom to charge for inefficient organisations and/or inappropriate technology choice) is the key to progress, whether through PSP or increased organisational autonomy or community responsibility.

The desired benefits are often not inherent in any particular system of management but are generated by the process of change. Box 4 gives a reminder that no system is perfect and that the process of change to revitalise a function may be more important than any one approach.

### **Box 4. Improvements through change**

The trend towards PSP may well be driven by the overwhelming need to revitalise management through a process of change, rather than by any inherent advantages of the private sector. 'I was struck by a reprint in the Municipal Journal of an article that appeared in the July 1893 issue. It described the first building to be created by the London County Council without a contractor. The LCC said "We are delighted to be able to report that men working for us are shrewd enough to see that the LCC offer practically permanent employment, and they recognise the necessity of putting in downright good work. At any rate, whatever may be their motive we have completed a splendid job, using the best material and workmanship, and have saved a considerable sum to rate payers'. Quoted by John Monks in the 'Prince Philip Lecture' to the RSA, 26/5/94

The assumption that the public sector had to take full responsibility for water and sanitation because of 'market failure' in meeting the needs of the poorest can now be challenged. This is possible because of the realisation that the capacity to supply the 'merit good' component of water supply and sanitation has by and large already been met (in urban areas) as it is only a small component of the overall 'private good' nature of water and sanitation (WATSAN) provision. Therefore a 'subordination to politics' (Farnham & Horton, 1996) is less relevant than a subordination to the markets - albeit regulated because of the monopolistic nature of provision and controlled because of the 'public good' nature necessary for support of the poor and the protection of the environmental resources being used.

The required management approach is to enable the indirect provider, the government (who are generally ill-informed about the sector), and the direct provider, the utility (who often lack the vision and leadership), to focus on the core functions by demanding clear objectives with measurable inputs and outputs. The task of delivering those outputs may then be given to a revitalised government owned institution who can use a mix of 'internal contractors' and external contractors or in some circumstances to a single external contractor with only government oversight. This implies a separation of the regulatory role and the operational role which have traditionally been undertaken by the one government agency.

### 3. The PSP Solution

Notwithstanding the solutions outlined above, for the average government owned and managed system at this time it is perhaps only PSP (or the consideration of it) that cuts through the confusion and forces the necessary clarification of the goals of water and sanitation providers and the price at which they can be supplied. The private sector is used to surviving through an understanding of this need for balancing product, price, promotion and place/service through marketing. PSP is also then seen to deliver the necessary efficiency gains and, potentially to facilitate the funding for the capital investment.

PSP is seen by many to be too expensive in having to generate profits which should not be necessary in supplying a basic need in a lower income country. But if the desired efficiency gains are realised it can in the end be less expensive overall. PSP is also seen as threatening the needs of the poorest. However, because many of the poorest are already having to purchase from private vendors at a high price due to the failure of the public organisation, in a privatised system that achieved the necessary service coverage prices paid by the poor would come down and the services they receive should improve - 'if the [official suppliers] could attract even 15-20% of the outlay that now goes to water vendors they could provide a lower cost service that would pay for itself within a few years (UNICEF, 1991). It should be noted that there is little discussion in the literature as to how concessions and affermage contracts meet the lifeline water needs of informal settlements which are a key target to receive public health benefits.

It is acknowledged that there are risks in involving the private sector whose goal has to be generating profits. There may be 'asset stripping' where the contractor does not maintain the assets adequately and runs them down so that complete rehabilitation is required before a new contractor could take-over. But this is not significantly different from the present publicly managed situation. Contractors may be tempted to force tariffs too high too quickly in order to 'profiteer'. But a competent contract and an appropriate level of regulation should reduce this risk. PSP can be seen as a very expensive way of, in effect, replacing a failed public sector manager (and/or organisational culture) but if the alternatives are to continue that failure through political inability to make internal changes then the cost is not so high.

The private sector, because it is seen to be more focused and better at escaping political interference, is presumed to be able to use all the techniques of the new managerialism in order to generate profits. It can become more efficient through using fewer staff and fewer resources (optimising use of plant and equipment and materials) in order to cut costs to generate more profits; it is believed to be more effective in achieving wide coverage in a desire to maximise its sales (through selling more to more customers); it is more performance oriented and customer focused in order to be better at generating revenue; it invests more wisely because of the need to generate cash from new investment; it has better (cheaper) sources of capital because it can be trusted to repay; it has better managers because it pays more, not being constrained by government salary scales; it is better at motivating staff because it can fire and hire (not always true even for the private sector in some countries) and use pay and bonuses in a flexible way; it has better management through focusing on more limited objectives; and it is driven by an underlying survival mentality which produce continuous improvement so as not to lose sales or a contract to the competition.

Such an idealistic view of private sector management has to be tempered by the equally common view that private companies are profiteering, self-serving undesirables who will corrupt any regulator to deliver the lowest quality product/service they can get away with for the highest possible price, focusing only upon the high income consumers, never investing any of their own money whilst running down any assets that a government has been unwise enough to entrust to them.

#### **Box 5. Contracting-out in Sri Lanka**

The National Water Supply and Drainage Board, in the late '80's, terminated an agreement with a private bureau for meter reading and billing. It had been taking six months between meter reading and receipt of bill by the customer. By bringing this activity back 'in-house' NWSDB cut this lag-time to just thirty days which led to consumer complaints falling from over 10% of billed connections to below 2% by 1989. *Source: Wickramage 1991*

..... participation in the market .....  
It is possible to reduce all these risks by developing the appropriate level of PSP. 'Experience suggests that the efficiency benefits from involving the private sector are closely linked to competitive pressures, rather than deriving simply from the presence of a private owner' (World Bank, 1996). The task in the sector is to find the most appropriate forms of PSP and competition (competitive bidding and sub-dividing areas and functions to provide comparators), regulation and contract monitoring which make it in the private companies best interests to produce in the desired way with the desired benefits.



## 4. PSP Options

The general perception of privatisation in the sector has tended to focus on the 'French' and 'UK models' as applied to the urban water sector. It is now assumed that the complete sale or 'divestiture' of water supply operations that occurred in England and Wales in 1989 along with the development of a sophisticated regulator is inappropriate in developing countries, because of the weakness of stock-markets, public unacceptability and political interference in regulation. There needs to be a revision in international understanding of what is meant by the 'UK model' (described further below). However, the preferred solution at present is often seen to be the 'French' model of leasing and concession ('privatising' management whilst retaining public ownership of the assets) which has served in France for over a hundred years and has been transferred, by French contractors, to Francophone countries with some success.

One of the arguments for involving the private concessionaires in low-income countries is the shortage of funding for capital investment when future supplies may cost two to three times more per unit than existing supplies (World Bank, 1992). It is presumed that private (presumably international) contractors have better access to sources of capital. Of the two main exemplars, in their own countries the UK private water companies are by and large funding their impressive capital works programmes directly out of cash flow from customer's tariffs and in France the concessionaires receive substantial subsidies from a government fund which has been built up from a general levy on all tariffs. Although funding direct from cash flow could not be expected in lower-income countries (making present customers pay now for future benefits) the principle to note is that where there are realistic tariffs then funding from the capital markets will be available. If funding is only available dependent upon government guarantees and/or 'dollarization' (guaranteeing exchange rates for international contractors) then the involvement of the international private water contractors is less beneficial to the consumers.

The 'French model' is well suited to urban water supply and sewerage but is only one approach by which the 'private sector' (when defined as the non-public sector) can contribute. National contractors at all levels (over and above the commonly accepted use of private contractors to build new systems) have greater potential for the rural areas and secondary towns and cities than the handful of international operation and maintenance contractors.

### **Box 6. 'The French Model'**

Many interpretations of what is meant by 'the French model' are now in circulation. The model is typically portrayed as a spectrum of shrewd contract agreements between public and private partners. This spectrum theoretically provides scope for PSP in the provision of public services for a wide range of economic and social situations, including those encountered in developing countries. Contract options range from task-specific, short-term service agreements through to sweeping, long-term concessions, each option favouring a different balance of risk allocation between public and private partners. The contracts favour flexibility, allowing sufficient scope for the overall agreement between partners to move from one part of the spectrum to another as expectations change over time. A continuous dialogue between public and private partners is therefore a characteristic feature of the model. Affermage agreements (leasing arrangements) are often mistakenly assumed to embody all that is 'the French model' because they have been so successfully and extensively used to provide public WATSAN services in France. However, affermage remains only one of the contract options that go to make up the French model.

An analysis of the strengths and limitations of the French model reveals that many of its contract options are precluded where appreciable capital investments are required. Application of the French model in developing countries in practice generally means the granting of concessions since these are the only options likely to meet the scale of current capital investment requirements. At home, the French model operates within a highly distinctive political and socio-cultural environment where it remains well regulated by a unique combination of institutional and market forces. Implementation of the model beyond the confines of this native environment is unlikely to succeed without the elaboration of tailor-made regulatory mechanisms. The Latin American response to this challenge is interesting. In Buenos Aires, the French model of service provision has been 'crossbred' with the UK mechanism for service regulation, whereas the presumption that the model is capable of 'trickling-down' to secondary towns has apparently failed in Cote d'Ivoire.

*Source: Jones, 1997*

However, the range of Private Sector Participation options is much broader than is sometimes assumed in the world of international consulting and the potential is much greater than the currently debated introduction of international concessions.

The PSP options described below are considered in ascending order of contract size which may, in practice, reflect a descending order in frequency of use. This is an indication of where donor support might be most useful.

#### **4.1 Community contractors**

Community contractors represent the coming together of (normally) low-income consumers, all residing in the same area, to form a Community Based Organisation which carries out particular tasks in that area. This 'contractor' can, for example, lay a pipe distribution network to serve their area and then perhaps sell the water through it (either rural through gravity supply or urban from a metered mains supply). In a rural area communities might be paid as contractors to construct their own well. Community contractors could be paid by a municipal council to construct and service storm and sullage drains in a low-income housing area.

*Duration: flexible but tends to be short term*

*Benefits: control within community; cash (and any surplus) remains within community; empowerment and therefore development; skills enhancing; reduced ill-use or vandalism*

*Costs: requires social development and technical support to set up and train; usually requires continuing support*

*Risks: can be distorted by local political leaders; can be subject to misuse of funds.*

#### **4.2 Mini-contractors**

Small scale contractors, whether individual artisans (half of all 'firms' in the UK construction industry consist of one person), cooperative groups or embryonic contractors have an important role to play in, for example, building on-plot sanitation systems (financed by householders or government), selling water through a kiosk or standpost, producing latrine slabs or organising local area water distribution.

*Duration: flexible but tends to be short term*

*Benefits: develops private enterprise skills; money retained in local area; reduced risk if contract failure; good starting point; good development*

*Costs: training of small contractors required; revolving funds for tools and equipment*

*Risks: high failure rate amongst small business start-ups; inexperienced contractors failing.*

#### **Box 7. Mini-contractors and market differentiation in Durban**

Water supply is a profit centre under Durban City Council which is developing innovative distribution systems to meet the needs of the low-income areas which may have no formal address. The 'Tank' system delivers a fixed 200 litres of water per day to a tank at ground level next to the customer's house. The 'water baliff', currently Council employed but with potential to be self-employed, controls a central distribution manifold from where he can fill the tank once a day through low pressure pipes to customers who have prepaid for the month and from where he can also supply water from a standpost to customers who cannot afford the tank. As the pressure and design flow are much reduced the cost of reticulation and water connection is 20% of conventional 'household' connections.

*Source: Durban City Council, 1996*

### **4.3 NGO 'Not for Profit' partners and contractors**

Non Governmental Organisations, which usually develop to promote particular values or assist specific groups of people, act as private voluntary organisations, part of 'civil society', usually without the profit motive. Because of their preparedness to work with a very clear development aim amongst low-income groups on a non-profit basis, NGO's can usefully take on a range of different tasks from social development assistance, through public health promotion to small-scale management contracting of systems, funded through their own sources or by partnering agreement/contract with government agency or users.

*Duration: flexible but tends to be short term*

*Benefits: socially oriented; innovative and purpose oriented; effective and efficient*

*Costs: limited access to working capital*

*Risks: more concerned with NGO agenda than service delivery; tendency to 'capture' by strong leader; inefficiency as businesses.*

#### **Box 8. Sulabh Private Public Toilets**

In India the NGO Sulabh International has built up a considerable reputation through promotion of low cost sanitation to the lowest income groups. Through well-maintained public toilets serviced on a pay per use basis (or funded by the Municipal Council) and individual latrines purchased by households, Sulabh is now believed to meet the sanitation needs of 10 million people on a daily basis and is achieving its overall goal of eradicating the degrading task of scavengers - whilst making provision for their alternative employment.

### **4.4 Suppliers**

The urban water sector is well used to using private suppliers, but particularly for the lower-income consumers there has been a tendency for government agencies to take responsibility for supplying handpumps, pump spares and latrine slabs for example. Suppliers are mentioned in this list as a reminder that they are a crucial element in private sector participation and who may also require support.

*Duration: one-off to long term renewable*

*Benefits: develops private enterprise skills; some money retained in local area; reduced risk if contract failure; good starting point; good development*

*Costs: excessive costs through high mark-ups; import taxes not levied on government suppliers (therefore unfair competition); training of small suppliers required; revolving funds needed for small scale manufacturing tools and equipment*

*Risks: high failure rate amongst small business start-ups; inexperienced suppliers failing.*

#### **Box 9. Rural Sanitary Mart**

The Rural Sanitary Mart (RSM) in Ghatkesar, India, has been established by an NGO, Learning in Field Training (LIFT), with support from UNICEF and the local Panchayat. The shop is set up with a \$1,500 revolving fund, a grant of \$350 towards communication and \$45 per month towards the manager's salary.

The shop sells a lot of things other than sanitation components which is a good way of making contact with members of the public, particularly masons who can then be sensitised about appropriate designs of latrine. Most profit comes from the sale of reinforcing steel, cement and cooking stoves but stocking these takes up a lot of his capital. He also sells small items like soap and pens to encourage people to visit the shop. He had some literature in stock to give to visitors when appropriate.

The manager had initiated an enterprising way of advertising the services provided at the sanitation mart. This was through using glass mounted slides advertising the shop which he had arranged to be projected during breaks in the programme in the local cinemas. The slides each cost \$20 and it only cost \$1.60 per month to have them displayed every day in the cinema. The advertising had attracted a large number of people to visit the shop which had increased sales. *Source: Skinner, 1997*

## 4.5 Contracting-out, services contracts

At a larger and more formal scale, services contracts are given by a main supplier, very often a public organisation. Examples include managing a pumping-station (or a network of stations), in billing & metering water sales, in operating a treatment works (water or waste water), in providing security staff on water treatment sites, in maintaining a group of handpumps, in managing operations and maintenance in an area, in providing and maintaining vehicles for a utility and in running water quality laboratories.

*Duration: one to two years*

*Benefits: Develops private enterprise skills; money retained in wider area; reduced risk if contract failure; good starting point for PSP; helps larger organisation or utility focus on their core tasks and improve management; promotes competition through several small contractors undertaking similar tasks; modest potential gains in efficiency; simple forms of contracts that are easy to understand; if performance or contractual problems occur it is relatively easy to revert to in-house management or to retender; offers a potentially beneficial form of PSP where there is strong current political or public reluctance to water tariff increases (which would be required for a leasing contract)*

*Costs: supervision; regular retendering (every three years)*

*Risks: opportunity to set contractual performance standards for the service provided to the customer is very limited (because only distinct components of the system are contracted out); scope for harnessing the managerial skills of the private sector is very limited because of small scale of work; serious risk that contractors will only be able to compete on the basis of the cost of their labour - leading to very low wages and low skills.*

### **Box 10. Chennai Metropolitan Water Supply and Sanitation Board Contracting Out**

Chennai Metro has begun a bold experiment in contracting out various services. For example many of the staff cars are now supplied by a taxi firm and the water tanker service has been contracted out. It was discovered that vehicle repairs were 3% of O&M costs and vehicles were off the road for 50% of time. Metro Water disposed of 59 vehicles and is now hiring vehicles, particularly tankers. It used to cost \$10 for 6m<sup>3</sup> delivery by Metrowater truck, now it costs \$5 for a 12m<sup>3</sup> delivery by a private truck.

Maintaining and operating pumping stations had traditionally been problematic for the Board. In particular, station labour quality and absenteeism jeopardised the conduct of these duties and the labour union rejected any attempts at imposing discipline. Policing and monitoring the work was difficult and expensive. Realising this from 1992 Metro invited tenders from contractors to undertake O&M of Sewage Pumping Stations. The great advantage to the contractors is the minimal capital outlay required to win and manage a contract. This allows them to build up their skills and experience gradually. They also receive cash up front, before they have to pay out and they trust Metrowater not to abuse the contract conditions which although appearing onerous are in fact standard for the Government of India.

The Metro Board reports that 14 sewage pumping plants were contracted out for a year in 1993 at an average cost reduction of 20%. Two or three contractors took a couple of pumping stations each, the remainder were taken by single contractors. Only in one case had a contractor failed to fulfil adequately the contract and in this case the damages clause in the contract was resorted to.

Under the new contracted out arrangements minor repairs are defined and these are to be carried out at the cost of the contractor. If the contractor can maintain the system for less they keep the balance which is believed to be an incentive for good maintenance. Major repairs because of their size and unpredictability are retained as the responsibility of the Board. Imposing the cost and responsibility for minor repairs on the contractor provides a powerful incentive to fulfil the routine, preventative maintenance required by the contract. By proper discharge of duties the contractor avoids costly and disruptive breakdowns.

Another 22 pumping plants (out of the total of 103) were privatised in 1994, this time for three years leading to 40% cost reductions. The contractors make these sort of savings because 90% of operation and maintenance costs is labour. Each contract had up to 6 bidders competing to win and each had a strong incentive to be price competitive. Even with the 40% reductions it is believed that the contractor is obtaining a 20% profit margin. For all the potential for conflict between board and contractors it was reported by both sides that the system had worked remarkably well and to the satisfaction of both. Both had a strong vested interest in the success of the scheme. The Board recognised that it had no long term interest in making conditions so onerous that it was not worthwhile for the contractor. Likewise, the contractor was compelled to be efficient, competitive and client responsive if his business was to succeed.

Building on its initial experience Chennai Metro is now planning to contract out O&M for complete treatment works.

*Source: Franceys, 1994 & Personal Communication 1997*

## 4.6 Management contracts

The management contractor, for a fixed fee (which might include a performance related element as it is important to specify performance targets), takes responsibility for managing operations and maintenance of existing assets, usually through existing staff. Assets to be managed range from complete treatment and distribution systems to elements of these systems.

*Duration: three to five years*

*Benefits: improved service with reduced risks to client (government) and contractor; can act as first step towards a concession contract; clear potential for setting performance standards for the level of service provided to the customers, with monetary incentives for the contractor to achieve those standards; scope for harnessing the managerial skills from the private sector; limited commercial risks allows contractors to learn without risking huge losses; possible to revert to in-house management, or retender, or let service type contracts; potential for host utility to encourage beneficial competition; contracts with good performance standards can complement moves towards the commercialisation of the Utility; potentially beneficial form of PSP where there is strong current political or public reluctance to water tariff increases*

*Costs: significantly more expensive than using public sector managers; transaction costs through contract preparation, negotiation and retendering; where works are cost reimbursable, limited incentive for contractor to make savings*

*Risks: difficulties in setting and measuring performance standards; difficulties in incentivising good consumer service; limited number of examples of Management contracts in the sector to learn from.*

### **Box 11. Trinidad and Tobago Management Contract**

A Management Contract covering the entire spectrum from water resources through to disposal of waste water, running for three years from April 1996, has been given to a joint venture between Severn Trent and Tarmac of UK and WASA with the Government of Trinidad and Tobago.

A Management contract was chosen because of poor information, undeveloped institutional arrangements and potentially slow legislative change. Management contracts were seen to be very flexible and gave the necessary time to consider types of PSP in the future as well as reducing future risks. It also had the advantage of getting to know the operator - an 'engagement period'.

The contract has as its main objectives: to improve customer service, to turn around the company in financial terms and to prepare for longer-term PSP arrangements. It is therefore viewed as an interim arrangement. It is not expected that everything will be put right. The smaller the scope of the management contract, the smaller the prospect of increasing value added. Training is seen as a vital element in preparation for the long term.

The process started when World Bank offered an \$80 million investment 'if you change the management process and introduce PSP'. The resulting management contract, involving 37 person years from Severn Trent over 3 years (key staff in place for three years but provision to draw in specialist teams as and when required), also requires the contractor to provide working capital for which the operator has arranged a loan. Capital expenditure is to come from donor agencies such as the World Bank. There is a 'base payment' plus incentive payments based on performance at six monthly intervals. There was no standard contract available so it was written by one of the partners. There was a 3-6 month operational audit under World Bank guidance during the process to inform negotiation after the bidding process when the contract data was realised to be inadequate or incorrect. Negotiations continued after the start of the contract to determine the basis of data on which to judge performance improvement. The contract allows for Severn Trent to negotiate a follow-on contract within a specified time limit or then it becomes open to all. There is a Forum for discussing issues as they arise, a consultative committee meeting every 4-6 weeks to raise issues, consider contentious points and become a good debating place to keep the wheels of the contract well oiled.

Following positive briefings from WASA there has been no problem in getting employees to function under the new management and there are visits and training in the UK for the workforce at all levels. As part of the process there was a 'preparation/getting to know you period' before the official handover date. The change management elements were not properly recognised by the client initially. One problem discovered was the client specifying even the characteristics of the new chief executive officer (CEO), but requiring a technical person rather than the necessary business person.

*Source: Personal Communication 1996*

## 4.7 Lease/(Affermage)

The lessor takes over the responsibility for operating and maintaining an existing system and for collecting the tariffs from which the company makes its profits as well as pays its costs. The government remains owner of the fixed assets used by the lessor and is responsible for investments in new works.

*Duration: eight to fifteen years*

*Benefits: profitability depends upon increasing efficiency of managing the assets; government reduces its risks of not collecting adequate tariffs; governments reduce political risks of tariff setting; a significant portion of the commercial risk and management responsibility is transferred; clear incentives and opportunities for the contractor to minimise costs, to provide a reliable service and to maximise revenue collection; lease contracts are a well tried and tested method of introducing PSP; performance standards can be specified and enforceable financial penalties stipulated in the contract; larger contracts can attract experienced international contractors in the sector who have the potential to achieve substantial gains in operating efficiency; long experience of this type of contract in France*

*Costs: transaction costs in setting up contracts; need for contract monitoring; requirement for enabling legislation;*

*Risks: unknown condition of assets at start of lease; unknown customer mix (proportion of lifeline consumers); difficulty of contract provision for informal housing areas; lack of provision of capital finance for new investment through contractor; with international contractors a mismatch in expectations between contractor and local government can arise - mainly because of differing socio-political and institutional cultures which can result in extensive high level negotiations.*

### **Box 12. Water supply by lease contract in Guinea**

In 1986 the Guinean authorities established SONEG (Guinean National Water Company) as an independent water services company wholly owned by the State, to be responsible for implementing and managing water supply, acting as owner of the facilities. The Minister of Natural Resources and Energy remains responsible for approving and monitoring any capital investment. SONEG awarded a ten year leasing contract for operations to SEEG (Water Services Company of Guinea) to produce and sell water through the entire network. SEEG is a Guinean certified public limited company with 51% of shares held by SAUR and Compagnie Generale des Eaux of France following an international call for tenders.

Fees collected go towards remunerating the service providers as well as towards covering distribution costs; they also pay for operations and investments carried out on behalf of the facilities owner (SONEG).

Guineans were not used to paying for water and therefore transition measures had to be introduced to ensure payment to the contractor. The World Bank agreed to pay a subsidy for ten years (having required the introduction of a realistic price) which gradually decreased after the first four years. This was to ensure that the sudden increase in price did not appear to be excessive for the users. However, users should be paying the actual costs by 1998.

The State exercises oversight of the operations of both companies by setting out the general policy and planning guidelines, making all legal and contract-related decisions, granting approval of water use rates and through being a shareholder.

SEEG began operations against a backdrop of severe water shortage and a network in a poor state of repair, encountering two main difficulties - internally in creating an efficient profit oriented company and externally in dealing with users. It was necessary to explain the qualities of drinking water, how to avoid wasting water as well as the notion of costs. Information campaigns were undertaken but generally proved of little use in convincing residents to give up illegal connections and to pay regularly. On occasions the army had to be called in to enforce cutoffs. To avoid such a 'heavy-handed' approach SEEG invested heavily in staff training, decentralisation and employee motivation, using internal promotion as well as other benefits which has proved a key element in achieving objectives and in the gradual 'pro-Guinea' influence upon the company's executive management staff. The Guinea experience and its success depends upon an extremely fragile system balance wherein each of the system's four partners (State, SONEG, SEEG, users) must act in cognizance of others. Should one of the partners default the whole system would break down. The Guinean system appears to be naturally evolving, based on the cumulative experience gained, towards assigning greater authority and independence to the distribution company, though neither the State nor SONEG wish to see that process go too far.

The weak points of the experience consist of the users' behavioural tendencies as well as their capacity to pay in a period of economic difficulties. Once the subsidies run out will the actual cost be bearable for the maximum number of potential users? Another weakness has to do with the institutional setting and the perception of the contract - SONEG reportedly respecting the strict bounds imposed by the contract, SEEG preferring an interpretation yielding greater freedom.

*Source: Lavigne 1995*

## 4.8 Concessions

The concessionaire takes over the responsibility for operating and maintaining an existing system and for new investments as and when they are required, paid for by also collecting the tariffs from which the company makes its profits as well as paying its operating costs and repaying its loans. Ownership of the assets remains with the government who could take over operation or pass on to a new lessor at the end of the concession.

*Duration: twenty to thirty years*

*Benefits: relieves government of the need to fund investments in the sector as well as management of operations; passes full responsibility for operations, raising finance and investment to the private sector; no split in responsibility between contractor and government; significant improvements in operating efficiency can be achieved; private sector incentives for efficiency are mobilised across all of utility's activities, thus contractor is able to implement business plans relatively unfettered, to the satisfaction of private financial institutions; an attractive option where significant investments are needed to expand coverage*

*Costs: high transaction costs; significant loss of government control; robust legal framework becomes more important as contract complexity increases; international contractors demanding government guarantee; higher profit margins required because of higher risk of losing capital investment*

*Risks: negotiation and flexibility required to a considerable degree; termination of contracts would create considerable problems; pricing of risks and inclusion of onerous guarantees tends to be problematic in low income countries; where foreign companies have a stake in the Concession, there is a tendency towards the "dollarisation" of water tariffs, which is a problem for countries with devaluing currencies; too few international competitors for concessions which could lead to a cartel; risk of international diplomacy interfering in decision-making; imbalance in skills and experience between large transnationals (and their equipment manufacturers) and local government officials.*

### **Box 13. The Aguas Argentinas Concession**

Over the last ten years, Argentina has transformed its public sector through an extensive privatisation programme. In 1993, a 30 year concession was awarded to a consortium led by Lyonnaise des Eaux to provide water and sanitation services to the population of Buenos Aires. Prior to the award, services were provided by a public company, Obras Sanitarias de la Nación (OSN).

Preparations for the transformation towards private sector service provision were extensive, lasting roughly two years from bid preparation to final award. Lack of reliable data concerning the performance of OSN complicated the preparatory process, and roughly \$4 million was spent on data collection, preparation of legal documents and identification of potential bidders. Pre-qualification of bidders was conducted on technical grounds and final selection was based on financial criteria. The winning bidder proposed a 27 per cent reduction in the domestic tariffs. In privatising OSN, the aim of the Argentine government was to improve performance and to attract private capital to meet investment requirements. The contract documents specify performance targets which imply a total investment requirement of \$4 billion over the 30 year concession period.

The regulator is a tripartite body comprised of 100 Federal, State and Municipal government representatives. It has an \$8 million annual budget, and is financed from a 2.7% tariff surcharge collected by the concessionaire. Tariff levels are formally reviewed at five year intervals, using K factors in a price capping system similar to that employed in the UK. However, since winning the contract, the concessionaire has negotiated a 'dollarisation' of tariffs to protect investments against local rates of inflation. An additional 13 per cent increase on the initial tariff has also been negotiated with the regulator in order to meet unforeseen investment requirements associated with an accelerated programme of meter installation. The original OSN tariff was raised by 8% just prior to privatisation in order to attract bidders, and remains at roughly 17 percent below its pre-privatisation level despite the above modifications.

Early indications are that service performance is improving rapidly. However, changes made thus far have been relatively simple and inexpensive to implement. These solutions have led to visibly improved output and have reduced water shortages during peak demand times. It seems fair to assume that the opportunity for such dramatic gains in efficiency will tail off rapidly. No figures for any changes in coverage levels have been made available as yet.

*Sources: Idelovitch & Ringskog K, 1995 and ECLAC, 1995*

#### 4.9 BOT/BOOT

Similar to a concession a 'Build (Own) Operate Transfer' contract is normally used for a complete new segment of the system such as a water source development and treatment works or a waste water treatment works. The private company is paid for the bulk water at a rate which should give them a reasonable profit having taken on the financing and construction risks.

*Duration: twenty to thirty years*

*Benefits: mobilises private finance for costly new investments; allows contractor full responsibility and freedom to manage the operation of the assets they have created which enables first class service;*

*particularly attractive where there is a major water supply capacity problem and only limited Government finance is available; addresses the overall infrastructure funding shortfall*

*Costs: high transaction costs; significant loss of government control; robust legal framework becomes more important as contract complexity increases; international contractors demanding government guarantee; higher profit margins required because of higher risk of losing capital investment*

*Risks: weaknesses in revenue generation deplete utilities abilities to pay for BOT bulk service; pricing of risks and inclusion of comprehensive guarantees tends to be problematic in low income countries; where foreign companies have a stake; tendency towards "dollarisation" of tariffs leads to foreign exchange risk and potentially unrealistic tariffs.*

#### **Box 14. Tirupur: India**

The task of providing water in India is made tougher by low tariffs, infrequent revision, political interference and low efficiency. These factors coupled with the exhaustion of accessible sources of water have added to the woes of city dwellers. Tirupur, with nearly 250,000 people accounts for about 90 per cent of all cotton knitwear exports from the country. Despite having a large economic base the town suffers from an acute shortage of water. A few years ago the town received water only once a week. With the commissioning of Water Supply Scheme II a year ago the supply situation improved to once in two days. However, the supply needs to be improved further not only for the domestic users but also for the industrial consumers who at present entirely depend on the water tankers for their daily requirements.

Tirupur Area Development Project (TADP) is a comprehensive project, envisaging the provision of 185 Mld water in addition to sewerage and drainage facilities, industrial effluent collection and treatment and improvement and expansion of intra-city roads. The total cost of the project, which is expected to be completed by 1999, is \$170 million, of which the water supply component is estimated to cost \$72 million.

The uniqueness of the project lies in its financing mechanism and the institutional arrangement being used for implementing the project. The project will be financed by both debt and equity with the debt: equity ratio of 2.6:1. A Special Purpose Entity called the New Tirupur Area Development Corporation Limited (NTADCL) has been set up to implement the project and to raise funds from institutional investors and capital markets. The NTADCL will have equity participation from local institutions, state government, central government, a financial institution (Infrastructure Leasing and Financial Services), and the BOT Operator. About \$47 million is to be raised through equity. Debt is to be raised through water bonds which will provide \$122 million. These would be revenue bonds with variable redemption period.

Traditionally only the state had the authority to do capital works in cities through its engineering department. TADP will be the first project in the country which will be implemented by a private company and which will recover costs through user charges indexed to inflation.

The recovery of costs from users will mean an increase in tariff which will go up from the present \$0.06 per m<sup>3</sup> to \$0.14 per m<sup>3</sup> in 1999 when the project is implemented. The tariff for industrial users, which has been set at \$0.63 per m<sup>3</sup>, will remain unaffected as even today the industries pay these high rates for purchasing water from the water tankers. The pricing of water in the project has been done on opportunity cost basis. Internal cross-subsidy within the sector will ensure that the poor are not overburdened with the increased costs although many studies have shown that the poor actually pay more for water than those with water supply connections.

The TADP will partly will be funded from Housing Guarantee funds to be raised in the US. This will be done under a programme of the USAID called the 'Financial Institutions Reform and Expansion' (FIRE) Programme initiated in India in 1994. One of the aims of the programme is to assist local authorities to access capital markets to finance their capital financing requirements to improve selected services. *Source: Raghupathi, 1996*



#### **4.10 Divestiture**

The water supply and/or sanitation assets and the rights to operate and maintain them in exchange for tariffs are sold to a private company (or consortium) or through a sale of shares or to existing management through a 'buy-out'. There may be a license regulating the authority and responsibilities of the private company which can be time-limited. There may be a Regulator with various duties to ensure compliance.

*Duration: indefinite (but may be limited by license - 25 years in England & Wales)*

*Benefits: may prove attractive in countries where there is already a good track record of private sector ownership of infrastructure in other sectors; a private water sector company would have clear incentives to respond to changing demands and achieve full cost recovery; expensive retendering would be avoided*

*Costs: high initial costs in selling the service provider*

*Risks: all the disadvantages listed for concession contracts would also be relevant in the case of divestiture; low income countries are likely to consider divestiture politically, ideologically and constitutionally difficult to contemplate; the creation of a private sector monopoly would be unwise where existing water sector management performance has not established a good track record and there would be limited leverage to improve performance because of that monopoly.*

An alternative to the UK approach to PSP through divestiture may be seen in the Dutch approach whereby the direct water providers have also been established as autonomous private companies. However the shares of the companies are owned by a combination of municipalities and state governments. The authority and responsibilities under law of a private company provide the necessary autonomy to operate in a commercially oriented manner but the public ownership of the shares ensures a focus on the needs of all customers and removes the temptation to generate excess profits. A variation on this idea is demonstrated by SAGUAPAC which is a 'private' urban water supply and sewerage company but owned 'cooperatively' by the 72,000 domestic customers to which it supplies services in Santa Cruz, Bolivia.

#### **4.11 Multi-mode PSPs**

In addition to the main approaches described above there is potential for combinations of these approaches to be used. 'Multi-mode PSP' is possible whereby a core company or regulator/overseer sets the objectives with a clear customer focus but enables, for example, one private company to be responsible for managing the source, treatment and transmission (either as BOT or lease), whilst other companies are responsible for selling the water through a leased (or BOT if 'greenfield' location) distribution system in different parts of the urban area. Alternatively the treated water from the BOT could be sold on to a single distribution company which contracts out meter-reading and billing to one company and operation and maintenance to a series of small contractors in various areas. Many combinations are possible and need to be considered to gain maximum benefits.

##### **Box 15. Uganda PSP**

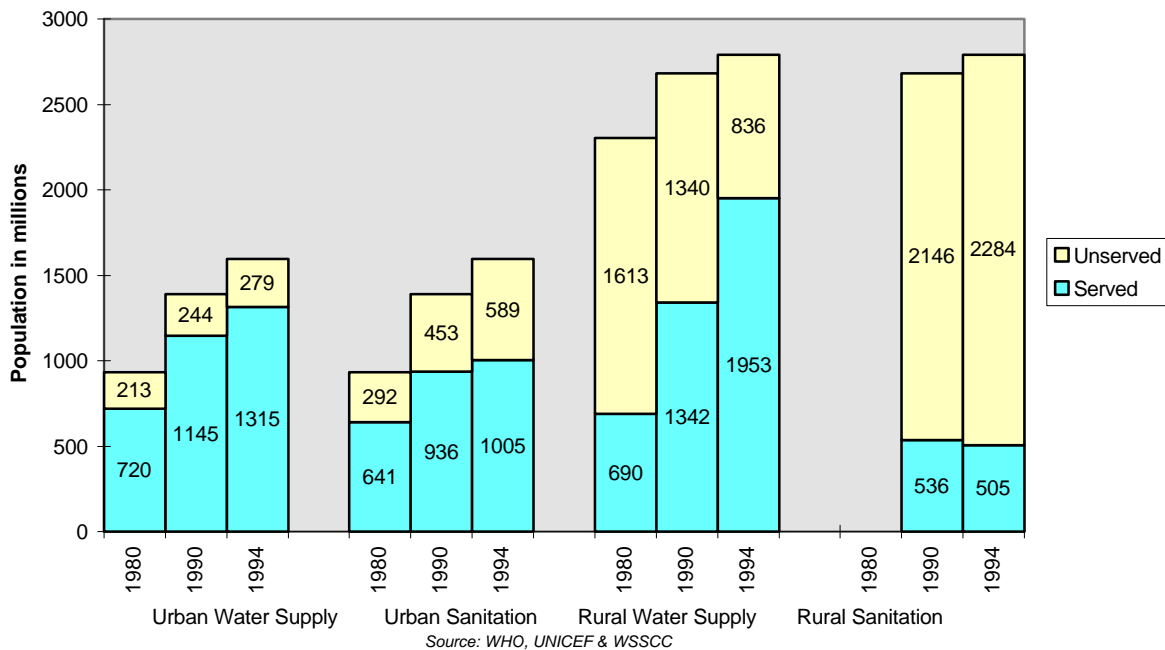
'The Uganda Government has hired a French company to implement a \$2 million pilot water project in Kampala which is expected to pave the way for the privatisation of Uganda's water systems management. The project, funded a French Government grant, will involve overhauling the water system in the Kampala suburb of Namasuba. More than 20 kilometres of pipes will be laid and each house fitted with a meter to monitor the water supply. Through the computerised billing system, loss of revenue estimated between 30 and 35 per cent would be curbed. Consumers have in the past complained of 'erratic billing.' The experimental system will buy water in bulk from a new main constructed by the National Water and Sewerage Corporation and is expected to carry the risk of non-payment by consumers. Managing Director Mr H Onok told *The East African* the project would enable the government to determine the management system to adopt in order to run the water systems on a commercial basis. A decision on privatisation would depend on the evaluation of the pilot project. "We want to make the business profitable to attract private companies" he said. *Source: The East African 6-12/1/97 personal communication*

## 5. PSP Selection

To choose between the options listed above it is necessary to differentiate between the different components of the sector in terms of population size and location as well as by technical solution. In the near future it is estimated that there will be 8 cities averaging over 12 million population, 164 cities averaging over 2 million and 30,000 cities and towns averaging 32,000, the latter representing two thirds of the urban population (United Nations, 1994). In addition, the 2.8 billion rural dwellers may represent in the order of 2 million communities. The institutional solutions of PSP which are appropriate in the 172 largest cities (currently the focus of most international attention) will not necessarily be suitable for the peri-urban areas of those cities or for the 30,000 average cities and towns and cannot assist the myriad rural communities.

Smaller-scale PSP is therefore seen as most appropriate for the lowest income groups whereas the more sophisticated leasing and concessions are particularly relevant to the metropolitan areas. As experience with levels of autonomy, forms of contract and the capacity of contractors increases with time it is envisaged that the more complex forms of PSP will gradually become more relevant to, for example, the secondary towns.

**Water & Sanitation Coverage in Developing Countries, 1980, 1990 & 1994**



**Figure 1**

### *Rural water supply*

Present estimates report a 70% service coverage of improved water supply for the rural population with 7.7% average annual service coverage growth, indicating early potential for full coverage relative to the 1.4% annual population growth. This is being achieved through the successful change to a demand led provision of discreet household level technologies (hand dug wells, handpumps, roof catchment) and community technologies (gravity flow and simple pumped systems manageable by community members) to overcome the operations and maintenance problems which had led to up to one third of systems being out of order in the past. This approach requires continuing support and there is a high potential for increased private sector involvement through provision of spares, repairs and extensions (suppliers and artisans) to community managers in addition to the transfer of many water points from community to private household management. Proposal: aim for increased assistance to the private sector to enable household provision with government (taxpayers and donors) support whilst promoting community management of community

technology (including subsidies for capital expenditure) supported by private sector designers and suppliers.

**Box 16. Public or private O&M**

Whereas 60% of the public handpumps in rural India were out of order, this was true of only 10% of the privately owned pumps.

*Source: Cairncross, 1989*

*Rural sanitation*

Coverage of rural sanitation, at 18%, has not shown any significant improvement over the past decade. However, the discreet, household financed nature of on-plot sanitation does not impose high external investment costs or significant operation and maintenance responsibilities. The private sector can readily participate through local artisan construction and manufacture and supply of components such as latrine slabs. Public involvement can be limited to the critical tasks of health and sanitation promotion and enabling household financing through small-scale credit agencies. Proposal: aim for households paying for capital and operating expenditure of appropriate technology supported by private sector suppliers and artisans with government enabling.

*Urban water supply*

In urban areas 82% of the 1.6 billion population are reported to have adequate water supply, the 3.9% annual growth rate in urban population having been matched by a 4.4% growth rate in service coverage. However, this growth rate is not enough for early completion of coverage and many of the present systems are failing to provide either adequate pressure or a 24 hour supply. The shortfall in coverage often reflects the lack of facilities for the lower-income groups whose public health needs are the greatest. In addition to the shortfall, demand for more water supply is growing as a result of improved economic performance which leads to increases in commercial/industrial demand. The increased household demand for drinking water is in part driven by higher living standards but also by the spread of conventional sewerage which significantly increases per capita demand. This is leading to fears of a funding gap for capital works to meet the demand.

**Box 17. Urban water supply**

There are cities (in India) where the supply averages one to two hours a day with some smaller towns getting a potable supply of one hour every alternate day. The worst affected are the poor who have to depend upon public standposts and often have to fight a daily battle for water, waiting in endless queues. Studies have shown that the inequities in distribution are enormous - what is consumed by the rich is almost twenty times what is available to the poor in the same city. For instance, in Delhi the slum dwellers consume as little as 16 lpcd whereas the affluent consume as much as 313 lpcd.

*Source: Raghupathi, 1996*

Because of economies of scale and the low value of the product supplied, urban water supply is a 'natural' monopoly - it is not practicable or economic to have direct competition. A large and relatively sophisticated institution is required to plan, organise and control this monopoly provision, a task traditionally given to a government body. However, there is considerable potential for private sector involvement in managing, or supporting the management of, all or parts of the system as well as in contributing to the capital requirements in the middle-income metropolitan areas. Proposal: aim for customer funding of capital (with government subsidies and/or guarantees in lower income areas/secondary towns) and operating expenditure with PSP to promote efficiency, to require viable tariffs and to act as lever for management change.

*Urban sanitation*

Present estimates suggest a 63% urban sanitation coverage with only a 3.3% annual growth rate. Urban sanitation may be met through on-plot systems, communal facilities or sewerage. On-plot systems involve households in providing their own facilities (as has been common until very recently in Japan to take a high-income country example). Communal facilities (public toilets and bath houses) use simple technology and simple institutional support as has been demonstrated in India. Sewerage, as for urban water supply, has economies of scale leading to monopolistic provision and needs complex institutional support. (It may be noted that sewerage with full sewage treatment is a very expensive form of sanitation, coverage of which

is only being completed in Europe, for example, during this decade with levels of GDP per capita two orders of magnitude higher than in the target consumers for this paper.)

The private sector can become more involved in supplying and servicing on-plot sanitation, in providing and managing communal facilities and, as for urban water supply, assisting with the management of sewerage and sewage treatment systems. There is also a particular, perhaps separate, role in providing industrial waste water treatment and disposal.

Proposal: aim for customer funding of capital and operating expenditure (for all the different technology levels) with PSP to promote efficiency, to build and run communal toilets and to supply components, build and empty on-plot systems and to require viable tariffs and to act as a lever for change for the management of sewerage and sewage treatment.

Table 1 (below) summarises the different target groups, the most likely technological solution and the resulting potential PSP option. Although not shown in the Table there is potential to upgrade discreet household technologies to networked facilities in the longer term which would lead to a change in the most suitable PSP options. Based on the population categories in lower-income countries and the number of unserved, the potential for ‘reaching the unreached’ through improved water and sanitation systems and improved PSP in the delivery and management of those systems is also estimated.

**Table 1.**

	<i>WATER</i>			<i>SANITATION</i>	
	Potential for reaching the unreached	Technological/ cost bias towards:	Institutional bias towards:	Technological/ cost bias towards:	Institutional bias towards:
<b>Rural</b>	High for water; Very high for sanitation	Discreet household and community technologies	CBO, NGO, Mini-contractor, supplier & service contract support to household & community management	On-plot sanitation	Household provision through private sector supply & construction
<b>Secondary towns</b>	Very high	Individual connections and point sources	CBO, NGO, Mini-contractor, services contractors and leasing support to commercialised municipality management or publicly owned private companies	On-plot sanitation	Household provision through private sector supply & construction & emptying
<b>Peri-urban</b>	High for water; Very high for sanitation	Distribution of bulk water supply through point sources	CBO, NGO, Mini-contractor support & services contracts to commercialised or PSP municipality/ utility management contract, lease or concession	On-plot sanitation, communal toilets	Household provision through private sector supply & construction & emptying; CBO, NGO, Mini-contractor, supplier & service contract support to communal toilets
<b>Urban metros (and secondary towns in higher income countries)</b>	Medium	Individual connections	Services contracts, management contracts, leasing or concessions under municipal oversight and regulation & BOT's to commercialised municipality management or publicly owned private companies	On-plot sanitation, on site sanitation, sewerage	Household provision through private sector supply and construction & emptying or sewerage with services contracts, management contracts, leasing or concessions under municipal oversight and regulation
<b>Metro core</b>	Limited	Individual connections	Management contracts, leasing or concessions under municipal regulation or services contracts & BOT's to commercialised municipality management	Sewerage	Services contracts, management contracts, leasing or concessions under municipal oversight and regulation
<b>Industrial</b>	Limited	Industrial connections	BOT	Sewerage	BOT

## 6. Private Sector Capacity

Governments face the risk of beginning the process of promoting PSP, at considerable political cost, and then discovering insufficient capacity, either in quantity of interested contractors or in quality of performance. The international (mainly French and British) operations and maintenance contractors are clearly of the highest calibre. However, their focus has to be on the upper-middle income countries and the metropolitan areas in the lower-income countries, the '172' capital and metropolitan cities. To obtain the benefits of PSP in the '30,000' secondary urban areas and the rural areas, a range of smaller, national contractors or publicly owned private companies have to be empowered. This requires a process which will accept occasional private sector failure within the development of the 'enabling environment'.

For the smaller scale PSP's there is justifiable concern over the availability and capacity of the potential contractors. For example, 'one of the most startling statistics about the Indian economy is that only about 3% of the economically active population are employed in private firms with more than ten employees. The vast majority make a living in the so-called informal sector' as once employers hire more than ten people, they have to follow the '45 separate laws, dealing with every conceivable aspect of employment: wages, job security, safety at work, industrial disputes, collective bargaining, and many more.' (The Economist, 1997b). As another example from the shipping industry 'some owners neglect safety and maintenance on board. The OECD estimates that the worst owners spend barely \$3,000 a day on a ship's maintenance, while a scrupulous owner-such as a big oil company, mindful of its responsibilities and its image-would spend nearly \$10,000.' (The Economist, 1997a).

Such disparities and weaknesses must be acknowledged in advance and allowed for if the benefits of PSP are to be achieved for the majority. Capacity building of the private sector and the need for an 'enabling environment' will become as important an issue as the present capacity building for the utilities. Indeed it may be more complex with the more urgent need for a satisfactory legislative environment, a potentially higher turnover of companies and staff and the need to clarify the objectives and the means which for so long have been conveniently left blurred.

This does not mean that the present interest in PSP should therefore be limited to the international contractors. The need is too great. PSP is perhaps the only lever which politicians will allow to reduce their tendency to interfere. But it is necessary to recognise that PSP capacity and the necessary institutional support capacity is also limited and that 'importing capacity' from France and UK cannot be a general solution.

As well as the limited private sector capacity there is a major concern that PSP in the metro cities will, in many countries, lead to a dismantling of the delicate web of cross-subsidies between metro and secondary cities (and sometimes between urban and rural). Scheme specific tariffs tend to be unnecessarily harsh and there still has to be some smoothing at a level which does not distort demand management. There may be little overall benefit to the sector if subsidies have to be enhanced to the secondary towns because of removal of overt and hidden subsidies and where the best staff have been taken by the private contractor. There is a recent example in Metro Manila where, for the sake of competition, the supply area was divided into two. The winning contractor in the wealthier part of the city was able to offer much larger tariff reductions than the contractor who was successful in bidding to serve the poorer side, such that the higher-income group will now pay less than half as much per cubic metre. PSP proposals must recognise the implications to cross-subsidisation.

The need for some form of regulation and the potential capacity for that must also be addressed. In the past there has been seen to be little need for regulation because of the assumption that the government utility or provider department would automatically work in the public interest to achieve equitable coverage and socially efficient tariffs. Irrespective of PSP there is now seen to be a greater need for government to monitor utility and departmental performance, ideally against national and international comparators. For most PSP options that level of regulation coupled with an effective contract is seen to be adequate and within the capability of any government ministry. For the more complex concessions and BOT's a more

.....  
sophisticated form of regulation is required. The contract may be deemed to detail the requirements but it is suggested that the francophone approach to regulation is that a signed contract is the starting point for

negotiations. The anglophone approach has been to assume that the contract is a fixed agreement against which adversarial claims can be made in (ever present) extenuating circumstances. The undoubted advantages of the flexibility in the francophone approach (note that there is no formal regulator in France) are matched by the need for commercially aware, high level, politically connected officials who are resistant to the opportunities for malpractice. Competition for such officials in government is intense and supply is limited. The use of committees, as in Buenos Aires, to act as a regulator overcomes some of these difficulties but the general recommendation is to avoid any systems which require a formal 'Regulator' through an emphasis on contracting-out and leasing.

## 7. Proposals

The proposition of this paper is that PSP is a neglected, necessary (but not sufficient) component in delivering improved water and sanitation services in developing countries. In itself PSP is not the solution. The solution is national 'capacity building' of 'performance oriented proactive marketing management' paid for by viable tariffs which will require the development of a national 'enabling environment' - legal, financial, institutional, regulatory. Part of that built capacity will remain with public organisations but it is recognised that there now has to be a bias towards developing private sector organisations to play their role. It is in that context that the opportunities for bi-lateral and multi-lateral assistance organisations are considered.

The United Kingdom has a unique experience of Private Sector Participation in that it has recently used a much wider range of the options available than any other country. Not only has it undergone privatisation by divestiture of the majority of the water and sewerage sector in England and Wales it has tried a different approach in Scotland by reorganising (consolidating) the sector under public management with the requirement for BOO contracts for major new investments. The UK has also developed a sophisticated regulator for the water sector to monitor and control tariffs and profits (Ofwat) and it has developed the Environment Agency to monitor and control (amongst other concerns) the environmental effects of water abstraction and waste water treatment and disposal.

In addition there has been considerable experience of contracting-out of services. The private water utilities contract-out some of their sewerage responsibilities, rather oddly in the context of this paper, to municipal councils. Outside the water sector the local authorities have experienced Compulsory Competitive Tendering (CCT), not only, as may be assumed, on conventional construction and service delivery contracts, but on parts of their previously supposed core business, including billing, accountancy, engineering design etc. Government Departments, for example the Highways Agency, have privatised many of their functions from design through to operations and maintenance including leasing contracts for motorway maintenance.

The Private Finance Initiative has explored the roles of concessions and BOT/BOO's for many different activities from estuarial crossings, extensions to motorways, to prison building (and operation of prisons). Other privatisation approaches, for example in the electricity industry, have used vertical disintegration (separating power generation from transmission from distribution) as a means of controlling monopolies in a utility. The railways privatisation has addressed the issue of social and environmental welfare needs by acknowledging that subsidies will continue to be required. Contractors therefore are awarded contracts on the basis of requiring the least subsidy rather than through offering the lowest average fares.

Other market oriented initiatives have included the 'Next Steps' programme to convert parts of Government departments into separate commercialised agencies with Chief Executives (to achieve proactive, service oriented management), the Citizen's Charter which promotes customer orientation of all government departments and 'Market Testing' through the 'Competing for Quality' White Paper which required all government departments to examine the tasks they undertook and propose which could be contracted-out. The introduction of internal markets into the NHS is another tool of considerable power in revitalising management.

These experiences are of considerable value in assisting developing countries and demonstrates the necessity of having a portfolio of PSP options. The UK has a long tradition of excellent international consultants, both in management (including finance, investment banking and law) and engineering and project management. These are supported by specialised research and educational institutions (undertaking training, research and consultancy) which have either moved into the private sector or are expected to operate as if they are in the private sector. In addition there are many effective NGO's based in the UK with long experience and commitment to serving the poor. All these organisations represent a powerful resource to be used by DFID to 'to improve the quality of life of people in poorer countries by contributing to sustainable development and reducing poverty and suffering.'

As described earlier, the water sector has complex problems in managing the integration of technology and management, social welfare and private convenience, public health and an industrial resource. DFID has given a lower proportion of its budget to this sector in recent years than many other donors. However, it is a field where developing countries require significant assistance and appreciate donor collaboration in piloting new approaches. Support in developing the role of private institutions in the water sector will be a vital component in sectoral success.

## 7.1 DFID Support

DFID is presently supporting research into PSP in the sector through the ‘Toolkits for Private Sector Participation in water and sanitation’ programme which, in conjunction with World Bank, focuses on leasing, concessions and BOT’s with a bias towards middle income countries. The DFID research into ‘Contracting-out services for water and sanitation’ concentrates on appropriate forms of contract for smaller-scale PSP through contracting-out of elements of operation and maintenance with a bias towards lower-income countries. DFID is also supporting a management development programme for senior Indian public health officials which acts as a commercialisation and pre-privatisation preparation for senior staff responsible for running water and sanitation supplies in India.

## 7.2 Recommendations for continuing DFID support

Recognising DFID’s Mission Statement <sup>1</sup> and poverty alleviation focus and taking into account the UK comparative advantage it is proposed that DFID should focus its efforts on smaller scale Private Sector Participation, from leasing to contracting-out to mini-contractors and NGO/CBO’s which can provide public health benefits and private convenience (particularly for women) to the lower-income groups. This implies that the majority of the support should go to secondary towns and cities and rural areas. But it may also form part of a contribution to a larger concession agreement in a metropolitan area, to protect the needs of the poorest who may otherwise be overlooked. It is recognised that the role currently being undertaken by the multi-lateral development banks is meeting the needs of the larger concessions and BOT’s.

*DFID's purpose is to improve the quality of life of people in poorer countries by contributing to sustainable development and reducing poverty and suffering. To this end DFID aims:*

- to encourage sound development policies, efficient markets and good government;*
- to help people achieve better education and health and to widen opportunities - particularly for women;*
- to enhance productive capacity and to conserve the environment; and*
- to promote international policies for sustainable development and enhance the effectiveness of multilateral development institutions.*

<sup>1</sup> DFID’s Mission statement and aims are currently under review.



Support is then required for:

**1. Research** that is oriented towards supporting PSP involvement in the sector (as is already being undertaken);

**2. Demonstration projects** in a variety of settings to act as research, development and dissemination projects for the benefit of future PSP and commercialisation attempts in the metropolitan peri-urban areas, the '30,000 towns' and the '2 million' villages;

**3. Pre PSP Project Preparation** to support demonstration projects through **educating clients**, that is selling the concept to the relevant stakeholders, including:

- politicians,
- community representatives,
- sector managers and professionals,
- sector workers (including unions).

#### **4. Capacity building for the private sector**

The potential national suppliers (of household and community 'purchasable' WATSAN items) and the potential national contractors, CBO, NGO, mini and medium sized, with each needing a different approach, require assistance in business development, contract preparation and financing to deliver the best benefits in the sector. Support to smaller contractors is best delivered through the strengthening of suitable national institutions.

#### **5. Capacity building for support** to the public and private sector

Support to national academic, research and training institutions to be used to develop indigenous capacity to undertake these programmes with specific in-country research and dissemination and **preparation for national management consultants**, who are the preferred channel for replication of the PSP process. To **support these consultants**, funding of initial transaction costs on pilot/demonstration basis is required as are country specific legislation studies, promotion of regulatory frameworks, facilitation of change and networking steps towards commercialisation, perhaps through enabling bench-marking.

To demonstrate the relevance of a market oriented PSP approach any such support can be paid for (though subsidised to the extent of any international costs) through revolving funds or in particular situations by the creation of equity stakes. Revolving funds to assist utilities and local authorities to employ national management consultancies to begin the process of developing PSP are also required.

#### **6. Donor responsibilities**

The extent to which PSP is being enhanced in any new project has to be considered at feasibility and appraisal stage; just as with gender questions and environmental sensitivity, there needs to be consideration of PSP in any water and sanitation PEC submission.

## 8. Conclusions

With external assistance and internal commitment the water and sanitation sector has made dramatic progress over the last two decades. However, the need is now moving from direct public health provision to meeting private convenience - balanced with continuing support to the lower-income groups to ensure their public health.

There are doubts over the institutional capacity, overwhelmingly public administration at present, to meet this change. The requirement is for proactive, commercialised management focused through marketing on the varying demands of different groups of consumers. This can be done through public administrations but the required investment in training, institutional development and the entire 'enabling environment' is seen to be too large and too slow. Too many attempts to assist in this way have been frustrated by 'politics' and 'the system'. The private sector, which already meets the needs of the poorest in many urban areas (though without being able to benefit from economies of scale), is seen to be the means to short-circuit this institutional development procedure, particularly as the demand is growing for water and sanitation as a 'private' convenience good. PSP is also seen as the lever to enable politicians to allow the required changes in tariffs which will release the necessary capital funding.

The international operation and maintenance contractors have only limited capacity which they are likely to focus on the larger cities in the upper-middle income countries. There is also limited capacity in national contractors, although limitless potential for growth. Therefore PSP needs to be supported in its broadest sense through all the various options possible to support urban and rural water supply and sanitation in the lower-income countries. This not only enables the provision of necessary water and sanitation for public health but potentially develops an economic sector and enables government to focus on its key tasks in regulation and oversight - 'steering' as opposed to 'rowing'. However, there is limited institutional capacity to support PSP at present and the potential benefits still demand a considerable investment in the overall 'enabling environment', requiring effective institutional and legal reforms as well as facilitating training and consultancy operations.

In the spectrum of PSP options a focus on the lower-income groups and the smaller urban and more distant rural areas implies an emphasis on using private artisan and suppliers, services contracting and the smaller-scale Private Sector Participation approaches with future potential for management and leasing contracts. These PSP's consequently have a higher risk of project failure which justifies the initial support of a development organisation rather than a development bank. This approach will not necessarily fill any funding gap but through the enhanced management focus will enable governments to borrow in the stronger expectation that their urban and rural councils will be able to recover optimised operating and capital expenditure on appropriate technology through viable tariffs.

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