

PPP and the Poor in Water and Sanitation

Interim findings

An interim review of documents

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List of Acronyms

<i>BOO</i>	Build, Own, Operate
<i>BOOT</i>	Build, Own, Operate, Transfer
<i>BOT</i>	Build, Operate, Transfer
<i>BOTT</i>	Build, Own, Train, Transfer
<i>CBO</i>	Community-Based Organisation
<i>IFI</i>	International Financial Institution
<i>NGO</i>	Non-Governmental Organisation
<i>PPP</i>	Public-Private Partnership
<i>PSP</i>	Private Sector Participation

Glossary of definitions for the purposes of this review

<i>Informal (Private) Sector</i>	Small-scale, unofficial and unregulated provider of water and sanitation, usually to unserved areas.
<i>The Poor</i>	For the purpose of this study, people who have inadequate access to water supply or sanitation services that are of sufficient quality and/or which are affordable to them.
<i>Private sector</i>	A commercial organisation of any scale that is self-financing and operating for profit.
<i>Private-Public Partnership (PPP)</i>	Agreement between the public sector and a private sector entity, whereby both parties share risk, responsibility, and in some cases investment. PPP differs from PSP in that the private sector has a greater degree of responsibility with regard to service provision.
<i>Private Sector Participation (PSP)</i>	Any degree of involvement of the private sector in the provision of a service. PSP can be considered a more general term that also

	encompasses PPP.
<i>Privatisation</i>	For the purpose of this study, and for distinction from PSP, full privatisation (divestiture) of water and sanitation services, e.g. UK model.
<i>Public sector</i>	Government department or agency responsible for the provision of public water supply and sanitation services (sewerage and wastewater).
<i>Water and sewerage/ sanitation sector</i>	The provision of sufficient and safe water meeting the appropriate standards in force for consumption and the adequate removal of wastewater and sewage from the household environment.
<i>Small-scale Private Sector</i>	Small-scale commercial organisation with a greater degree of formality than the informal sector, e.g. may have a small office.

1. INTRODUCTION

General overview of the public-private debate

Private-sector participation (PSP) in urban services was first engaged in countries of the South during the 1980s, predominantly in Europe and Central Asia, South-East Asia and Latin America, and has expanded significantly during the 1990s, with a growing presence in other regions such as North Africa and the Middle East (Johnstone & Wood, 1999a; Nickson, 1997a).

There are many reasons why developing country governments have turned to PSP for the provision of urban services. These comprise both external and internal factors. Internal factors include increasing urbanisation and incapacity of government authorities to keep up with the provision of services; the financial difficulties faced by many governments of the South during the 1980s and the ensuing difficulty of funding public infrastructure and services. Among external factors are the requirement by International Financial Institutions (IFIs) that certain indebted nations reduce domestic spending as part of Structural Adjustment Policies; and the promotion of the idea that the private sector - through the adoption of market-led principles - is capable of providing a more efficient and better quality service, with private capital and better credit ratings at its disposal. In this way, in many countries where private sector involvement is occurring, the role of the public sector is changing from public service provider to project management and regulation (Calaguas, 1999; Johnstone & Wood, 1999a; Nickson, 1997a).

The increasing participation of the private sector in the urban services sector in developing countries has occurred in most urban service sectors: energy, infrastructure (roads, airports etc.), telecommunications, water, sewerage, solid waste disposal, and transport. However, water and sewerage is the sector that has attracted least interest from the private sector after telecommunications, energy, and transport, even in Latin America, which is the region in which most PSP is concentrated (Nickson, 1997a; Roger, 1999; Silva *et al*, 1998; Spiller & Savedoff, 1999). Reasons for this trend have been attributed to the difficulty of introducing competition into the water and sanitation sector (Roger, 1999) and the fact that it is not such an attractive investment as the other sectors (Spiller & Savedoff, 1999).

Why private sector involvement in water and sanitation a political issue?

While the privatisation of commodities such as telecommunications and energy as not provoked much opposition, private sector involvement in water and sewerage services has led to a polemic debate over whether it is appropriate for these services to be provided by a private company rather than the public authorities due to the status of water as a basic need (Johnstone & Wood, 1999a). The underlying debate seems to be concerned with whether water should be classed as a "public good" or a "merit good". Rees (1998) defines "public goods" as those that provide benefits to communities in general, rather than individual consumers (e.g. sanitation); and "merit goods" as those which society should be provided irrespective of whether individual consumers are willing to pay for them (e.g. education). Johnstone & Wood (1999a) argue that water should be classed as a merit good, as such goods are fundamental to individuals' capacity to function in society, and society as a whole values individual consumption of these goods beyond the immediate benefits to the individual. Nickson, (1997a) notes that water is often labelled a public good, yet argues that it does not technically fit into this category. However, Nickson also sees water as a commodity that is vulnerable to market failure and natural monopoly, thus presenting no strong case for public provision, but also not being a true market good. In the context of water being primarily for the benefit of the consumer rather than society as a whole, Solo (1999) argues that water as a public right should be questioned. Cairncross (1992) also believes that water should be treated as an economic good in that it should respond to consumer demand, asserting that water should be seen as selling a product instead of providing a service, in order to stimulate demand. The question regarding the nature of water-public vs merit good is still not resolved and wherever the initiatives for PPP are undertaken the question was frequently raised about the nature of water.

Can private sector respond to the needs of low income households?

The underlying question seems to be not so much over whether people – including the poor – should pay for services or not, but whether the private sector is capable of providing an adequate supply within the financial limits of poor people. Lewis & Miller (1987) note that charging for water is not culturally unacceptable in sub-Saharan Africa. Drakeford (1998) does not disagree, but notes the difficulty of passing on social objectives to private companies, and, with reference to privatisation in the UK, asserts that privatisation has generally failed to benefit poorer groups, who now spend a much higher proportion of their income on services.

However, in parallel to this debate, it is often documented that many poor residents in the South lack access to a formal water supply, and rely on water from other sources, which may be unsafe and inadequate. Furthermore, the poor commonly pay higher tariffs for alternative services, for example, from informal water vendors. A study undertaken in Nigeria found that private vendors operating in unserved areas charge an average of N45.00/m³, and up to N62.00/m³, for water that they have obtained from the public supply at an average cost of N1.35/m³, but as low as N0.44/m³ (Mustafa, 1993). The author notes that, aside from the poor paying at least 33 times as much for water as those connected to the mains, the low charges set by the Public Water Corporation for water that costs approximately N20.00/m³ to produce ultimately impedes the expansion of the water network to other areas in the city. In many poor areas of cities of the South, the informal private sector fill the gap left by the public authorities, and make a profit in doing so. The rationale behind support for PSP is often that, the poor will receive a formal supply of better quality and reliability, and pay less than they do at present. However, McCoy-Thompson (1998) stresses that, although government may hand over services to be run by the private sector, the provision of “public-related services” will ultimately always be its responsibility.

Conceptualisations of Public-Private Partnership

While there is a large volume of literature relating to private-sector participation in urban services, there appears to be a lack of consensus both about the definition of “public-private partnership (PPP)” and the distinction between PPP and the more general terms “private-sector participation” and “privatisation”. The literature presents several differing conceptualisations of these terms, which will be discussed below.

The most straightforward conceptualisation of PPP is based on the structure of contractual arrangements between the public and private sectors:

PPPs are contractual arrangements whereby private companies are involved in the financing, ownership and, sometimes, operation of public facilities (Crosslin, 1991:16).

Production and distribution with a private provider but cost-recovery with the government; or production by the private provider and distribution and cost-recovery by the government (Nath, 1994:435-436).

These conceptualisations all suggest that PPPs entail private-sector involvement at a level which involves greater sharing of risks and opportunities than service provision alone. As noted by Shanker and Rodman (1996), the same distinction is often made between *private-sector participation* and *public-private partnerships*:

PPPs differ from simple privatisation of government services where the private company provides government services for a fee. In PPPs, there is a much larger degree of entrepreneurial risk since the private company finances and owns the facilities on a speculative basis. There is no guarantee of profit, often there is no guarantee of revenues, and usually the capital investment is relatively long term such as 30 years (Crosslin, 1991:16).

Other authors also see the element of risk taken by the private sector as a factor that distinguishes PPP from other models of privatisation:

The term [PPP] is used to describe economic activities in which government and private agencies share in the costs and/or risks [...] where these involve joint planning or negotiation, there is public/private interaction and partnership (Bennett, 1998:193).

The private company must assume operating risk during the operating period or assume development and operating risk during the contract period (Silva *et al*, 1998).

In this way, a distinction between models of privatisation with low private-sector responsibility, such as service and lease contracts, and those with significant private sector participation, such as concession contracts, seems to be drawn. The term *privatisation* is often used to refer to the divestiture model, whereby the private sector has full responsibility for the production, distribution and cost-recovery of water and sewerage services (Calaguas, 1999; Nath, 1994).

Bennett (1998) expands on the conceptualisation of PPP by attempting to define exactly what constitutes *partnership* between the public and private sectors:

The term partnership also refers to the process and machinery for ongoing consultation and collaboration between public agencies and private sector representatives on government policies, regulations and procedures or, more broadly, government action to improve the enabling environment for firms and NGOs. The participation of beneficiaries in the design and monitoring of development projects is one kind of 'public-private partnership' (Bennett, 1998:193).

Bennett is also one of the few authors who makes reference to the role of users and civil society within a conceptualisation of PPP. Such thinking does not appear to be replicated elsewhere in the literature. There is a certain amount of discussion over whether civil society organisations (especially NGOs and CBOs) should be regarded as private sector, as many operate according to private sector principles in order to cover costs and generate a surplus for investment.

There is also a lack of consensus in the literature over the definition of what constitutes the *private sector* in the context of PPP arrangements. The majority of literature specifically discussing private-public partnerships (as opposed to other models of privatisation) refers to large-scale initiatives characterised by a *formal* relationship between a government agency and a corporate entity. This conceptualisation is reinforced by the following definition of PPP:

The operator must consist of one or more *corporate* entities, with significant private equity participation, that are separate from any government agency (Silva *et al*, 1998; italics added).

Most initiatives documented in the literature that are specifically described as PPP are characterised by large-scale contracts, such as concession and BOT-type contracts, that involve large scale – often international – water companies. Examples include Buenos Aires, South Africa, and Sydney. In only a few cases are smaller-scale and/or more informal initiatives described under the umbrella of PPP. This category includes small-scale initiatives in sub-Saharan Africa including coin-operated standpipes. It is unclear whether this apparent distinction is made due to the lack of conceptualisation of small-scale initiatives as PPP - possibly due to a lack of explicit public-private co-operation - or due to the fact that larger-scale initiatives are those that are more likely to be documented in the literature. (any reference/s)

Although the specific focus of this review is *private-public partnerships* (PPPs), in view of the lack of consensus as to what specifically constitutes *public-private partnership*, this review has sought to examine the wide range of literature related to the broader topic of private-sector participation in water and sanitation services.

Aim(s), structure and scope of this literature review

In the midst of the consensus that the private sector is able to provide better quality water and sewerage services more efficiently and cost-effectively, it may be assumed that poorer groups will automatically benefit from such improvements. The aim of this literature review is to examine the existing body of literature on private-sector participation (PSP) in the water and sewerage/sanitation sector and assess the extent to which it includes and has impacted poorer users.

More specifically, this literature review seeks to examine the nature of PSP in water and sewerage in low and middle-income countries, without overlooking lessons from richer countries. The paper will consider different aspects of PSP agreements – including organisational, legal, financial and environmental factors – and examine how these aspects are being directed towards the needs of poorer groups; or how they can potentially be designed in order to address the needs of the poor. The review aims to be practice-based and does not intend to enter into the debate over whether private-sector participation in water and sewerage is preferable to exclusive public provision. The scope of this review will include all forms of private-sector participation in water and sanitation, that is, agreements that entail participation from both a government department or agency and a private company. This paper may present a bias in favour of large-scale privatisation contracts – often involving international service providers – and based in larger cities; however this bias is deemed to be an accurate reflection of the PSP literature. This review also limits itself to private sector participation in the provision of water and sewerage, on the grounds that PSP in water and sanitation may present significant differences to PSP in other sectors. The review also focuses on the end distribution stages of these processes, in order to focus on the effects on poor users, and therefore does not cover to any significant extent PSP in areas such as water collection and treatment.

The review will be structured as follows. The review will first present a description of the bidding process for larger-scale contracts[please refer to the itnerim finding output on by Halcrow Management Sciences-also on the project web page,MAKE LINKS] and will give an overview of the key issues and questions to be

considered within the overall framework of PSP in water and sanitation. The main section of the paper will be divided into four sections, representing the four stages of the PSP process: pre-bidding phase, bidding phase, operation phase, post operation phase. The key issues and questions [our inception report may also -be referred to-also on the project web page-MAKE LINK] will be examined within each of these stages, with each aspect being considered in the context of provision of water and sanitation services to the poor, that is, with respect to the policies and mechanisms that ensure that the poor have access to improved services. A section discussing the points noted during the four stages will follow, before reaching conclusions and identifying gaps in the knowledge compiled.

Current trends in private-sector participation in water and sanitation in low and middle-income countries

The following trends have been noted in PSP in the water and sanitation sector in developing countries, and are being reported here as they may influence the scope of provision to poor communities.

Concession, lease and BOT-type contracts, and possible service contracts, appear to be the most common, and the full-privatisation (divestiture) model is the least popular, and in fact has not been replicated outside England and Wales (Johnstone & Wood, 1999a; Nickson, 1997a; McCoy-Thompson, 1998; Sansom & Franceys, 1997). While it is true that certain contracts predominate, Nickson (1997a) stresses that no one particular model appropriate to all situations, and the predominance of concessions and leases may be due to their perceived attractiveness by both public and private sectors: public due to the majority of the risks lying with the private partner, and private because the higher risks mean potentially higher returns (Silva *et al*, 1998). However, no clear guidelines are available which specify the boundaries within which a certain type of contract can be more effective for the provision of services for the poor.

Box 1: Overview of formal and alternative models of private-sector participation in water and sanitation provision

Models of private sector participation in water and sanitation services can be divided into four categories:

- Full privatisation (divestiture)
- Partial private-sector responsibility
- Co-operative model
- Informal sector provision

Full privatisation (divestiture)

Under this model, the private company not only takes full responsibility for the operation, maintenance and investment, but ownership of the infrastructure is transferred from the public to the private sector at an agreed fee. The government then retains the responsibility for regulation. This model is uncommon and has only been adopted on a wide scale in England and Wales. Under a partial divestiture model, the state utility may be transferred via the sale of the assets, the sale of shares, or a management buy out; and the contract may be limited by licence, with a substantial notice period being applicable (approximately ten years) if the contract will not be renewed.

Partial private-sector responsibility

This category covers a number of different contracts in which responsibility for service provision is shared between the private and public sectors, with differing levels of responsibility being delegated to the private partner depending on the contract type.

Service contract

These contracts are usually short-term agreements whereby specific operations and maintenance activities are contracted to the private sector. Payment to the private sector is usually made on the basis of fees agreed in advance, lump sums or unit costs. Under this type of contract, the public sector retains overall responsibility for the administration of the service and the private sector undertakes specific activities with a low degree of risk. Service contracts are often used for first-time private sector participation, or where the context presents greater risks to the private sector.

Management contract

A management contract entails private-sector responsibility for utility operation and maintenance, but without the obligation of investment or commitment of private investment capital. This is therefore a low-risk contract but with greater responsibility than a service contract. These contracts typically run for approximately five years.

Continued...

Lease contract (Affermage)

Under lease contracts, the private firm operates and maintains the utility at its own commercial risk, deriving revenue directly from tariffs, but does not invest in infrastructure. Such contracts usually run for between six and ten years. Tariff levels are negotiated to allow the private contractor to cover at least operation and maintenance costs.

Concession contract

Under concession contracts, the private company manages the infrastructure facility and operates it at its own commercial risk, and also accepts investment obligations. Such contracts are usually fixed for long terms of between 25 and 30 years to allow the operator to recoup expended capital, and at the end of the contract, the assets are transferred back to the state. The role of the government in concession contracts is predominantly regulatory.

Build-Own-[Operate]-[Train]-[Transfer]-type contract (BOO/BOT/BOOT/BOTT)

These contracts are similar to concession contracts with the difference that they are usually used for greenfield projects, as the private contractor is also responsible for constructing the infrastructure. The private partner constructs and manages the assets in a similar way as under the concession contract, and the public authority often makes payment to the private partner for the supply. At the end of the contract, the assets may either remain indefinitely with the private company or be transferred back to the government, sometimes at a pre-determined fee.

Co-operative model

The co-operative model is a type of government-owned public limited company (plc) subject to the rules and regulations of other plcs and of which the majority of shares are publicly-owned (either by government or citizens/users). This model then combines public ownership and operation in accordance with business principles. Such arrangements are in place in countries including the Netherlands, Germany, Poland, Chile, Bolivia and the Philippines.

Informal sector provision

Provision of water and sanitation services to the poor by "informal" and/or small-scale operators is common in most low- and middle-income countries, especially where the poor lack access to formal service provision. Traditionally, informal providers have operated separately from government, however there are an increasing number of cases in which government is supporting small-scale private initiatives in order to increase service provision to the poor. These include the establishment of water kiosks in slum areas of Kenya in which the government allocates water to kiosks who then resell it to local users.

Other alternatives

The Business Partners for Development initiative supported by the World Bank is investigating tripartite partnerships between public sector, private sector and civil society, on the assumption that agencies working together can serve the needs of the poor better than the efforts of a single agency. Other initiatives being examined in the literature focus on community provision and the role of other civil society organisations in water and sanitation provision to low-income areas.

Sources: Blokland (1999), Calaguas (1999), Kempe & Schreiber (1997), Johnstone & Wood (1999a), Lewis & Miller (1987), Nickson (1998), Ramaema (1997).

There is also a clear strong regional and national concentration of PSP contracts, principally in Latin America (especially Argentina, Mexico, Brazil) and followed by South-East Asia (especially Malaysia, The Philippines, Thailand, China). Areas in which there is a growing participation in PSP include French-speaking Africa, Europe, Central Asia (in particular Turkey), the Middle East and N. Africa. The regions with the least private sector participation, and no large-scale participation at all, are South Asia and Southern Africa, although some cities, for instance Tiripur (India), Karachi and Durban are considering involving the private sector in water and sanitation services (Johnstone & Wood, 1999a; Nickson, 1997a; Roger, 1999; Sansom & Franceys, 1997; Silva *et al*, 1998). This view is contradicted by Roger (1999), who ranks India as fifth in the ranking of countries with the highest concentrations of PSP.

Table 1: Ranking of countries according to levels of PSP in urban services¹

Ranking of countries according to <i>greatest concentration</i> of PSP	Ranking according to <i>total investment</i>	Ranking according to <i>number of contracts</i>
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¹ No specific figures are available for the water and sewerage sector.

<ol style="list-style-type: none"> 1. Argentina 2. Brazil 3. China 4. Hungary 5. India 6. Indonesia 7. Malaysia 8. Mexico 9. Thailand <p>Source: Roger (1999)</p>	<ol style="list-style-type: none"> 1. Argentina* 2. Philippines* 3. Malaysia* 4. Turkey 5. Mexico <p>* 69% of total PSP</p> <p>Source: Silva <i>et al</i> (1998)</p>	<ol style="list-style-type: none"> 1. China 2. Mexico 3. Brazil 4. Argentina 5. Malaysia <p>Source: Silva <i>et al</i> (1998)</p>
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The general consensus for this marked concentration of PSP is that Latin America and South-East Asia presented attractive investments to the private sector due to the liberation of their markets and the establishment of credible legal and regulatory institutions (Johnstone & Wood, 1999b; Silva *et al*, 1998). Structural Adjustment Policies in the 1980s and 1990s may also have played a significant role. The concentration of contracts in certain countries may also be explained by the fact that once one contract is in place, it is easier to set up others, as the private company becomes more familiar with the business environment of that country. The principal reason for which the divestiture model may not have been replicated outside England and Wales may be due to governments' unwillingness to relinquish control over national assets (Silva *et al*, 1998). It is also clear that the poorest developing countries are least attractive to private-sector intervention, and private investors are reluctant to take the chance of being the first to become involved (Johnstone & Wood, 1999a; Silva *et al*, 1998). Roger (1999) notes that the countries that have attracted the greatest concentrations of PSP represent most of the developing world's *population and income* and that most PSP has been introduced in *middle-income countries*, with the exception of China and India, which are the most populous low-income developing nations. Nickson (1997a) proposes a correlation between the level of capacity of the public authorities in a city and the results of PSP, based on observations of success in high-income municipalities of Latin America such as Buenos Aires, Mexico City and São Paulo.

There has also been an observed concentration of PSP in *water* and a distinct lack in *sewerage and sanitation* (Silva *et al*, 1999). The general exceptions to this trend have been in Malaysia, the Philippines and Latin America, where PSP in the provision of sewerage is more common due to the presence of well-developed water infrastructure and higher levels of wealth and prosperity (Silva *et al*, 1998).

Amongst the bidders for water and sanitation contracts, a dominance of a few international providers has been noted (Lyonnais des Eaux, Vivendi, Águas de Barcelona, Thames Water International and Saur) (Silva *et al*, 1999). This apparent lack of competition may be attributed to the power of the larger firms to distort markets, lack of enforcement of anti-competitive laws or to the experience in the specialist nature of the work. There is a tendency for international companies to form consortia with local companies instead of becoming directly involved (Rees, 1998). However, the conditions of collaborations are not publicly known. It is difficult to ascertain proportion of profits leaving the country of work or the levels of improved local capacity due to these collaborative arrangements. More importantly, the few international bidders also target *large-scale* contracts in capital or principal cities ("economies of scale"), and smaller-scale contracts in small towns are less attractive to large-scale private-sector providers and do not uncommonly receive only one bid (Johnstone & Wood, 1999b; Rees, 1998).

However, there are cases where a group of cities, including smaller cities, were included in the contract package such as in Mozambique. Another interesting development in contract packaging is combining different sectors such as the proposed contract in Morocco where water, power and telecommunication are combined. These development may lead to the complete delivery of infrastructure service by PPP through a single contract.

The PSP process

Following description of the PSP process should only be treated as a general guide as there are many variations in the detail and sequence of the activities. The process of the engagement of private-sector participation in the water and sanitation sector is outlined below. **[For more detail please see Link to the Halcrow study]**. This description is intended as a general overview of the stages involved, and is based on the process for large-scale private sector tenders, usually involving multinational water companies with

financial support from International Financial Institutions (IFIs)². Box 2 outlines a practical experience of the process that took place in the selection of contractors for rural water and sanitation services in South Africa.

Phase 1: Pre-bidding - Planning and Consensus of Model, Scale and Scope of PSP

- a. consideration of PSP: awareness and consensus of possibilities for restructuring the water and/or sanitation sector, driven by at least one stakeholder e.g. IFI, government, the public.
- b. development of overall policy to secure an economically advantageous PSP arrangement: identification of PSP model in terms of type, scale and scope; government sourcing of IFI sponsorship for funding and/or appointing advisers; invitation of international competitive bidding for advisers; or direct internal appointment on basis of ToR. Advisers appointed and work in line with ToR which specify time and cost constraints and fee structure.
- c. Investigation of PSP options: advisers mobilise team to collect data, appraise issues and draft recommendations within type, scale and scope defined by ToR. Process informed by extensive financial modelling, linking capital and operational expenditure with coverage and tariffs. WTP studies if done. Client approval of key reports to allow substantial scope for aligning preferred option to sponsor's expectation. Obtaining no-objection from IFIs.
- d. Selecting preferred option: further technical, legal and financial modelling and development of selected preferred option to allow sponsor to choose most suitable model. Stakeholder consensus is critical - obtained through workshops and seminars etc. Input from IFI in consensus process, sometimes includes consumer groups.
- e. Developing detailed PSP format: advisers develop a detailed PSP model in terms of key financial, legal, contractual and regulatory frameworks to form basis of engagement into long-term agreement of sponsor and operator. Contractual framework will specify standards of customer service and requirements for enhancing capacity and extending areas served - critical stage because sets the outputs required of the potential PSP bidders allowing competitive procurement on a common basis.

Phase 2: Procurement - Bidding, Selection of Operator, Negotiation and Drawing-up of Contract

- a. Procurement of PSP arrangements: promotion of the PSP opportunity.
- b. selection of bid list of technically competent and financially sound companies: IFIs require that at least 3 competent bids are received - attention to transparency and equality of opportunity.
- c. Pre-qualification: initial shortlisting
- d. Bidding
- e. Technical negotiation
- f. Financial closure
- g. Awarding of contract

Phase 3: Operation - Implementation, Operation, Delivery and Regulation

- a. Implementation of PSP arrangements: engagement of private company in contract according to the terms and timeframe of the agreement reached.
 - Mobilisation of private company
 - Transition
 - Operation
 - Management of facilities
 - Improvement and extension of services
 - Investment (if applicable)
- b. Establishment of operational autonomy from government, changing culture and re-orienting management from public to private sector ethos. New financial, legal and corporate arrangements, transitional provisions for staff
- c. Duties of regulator: monitoring tariff adjustments, operator performance and customer service levels as set out in contract.

Phase 4: Termination - Hand-over of Assets, Renegotiation of Contract, Evaluation

- a. Regulation of PSP arrangements and re-setting prices: tariff levels and outputs have usually been agreed in the long-term contract, with detailed agreements of regulation to monitor and enforce what was originally agreed. Provision for price reviews at pre-determined intervals, market testing and

² Information adapted from unpublished report on PSP strategy, prepared by Halcrow Group Ltd. For WEDC, Loughborough University, first draft, January 2000.

- performance assessment by independent advisers. Regulatory mechanisms allow change in quantum or timing of outputs and tariffs.
- b. Termination of contract: suitable follow-on arrangements for extension, reselection or handing back of facilities to government (poorly developed due to lack of experience).
 - c. Evaluation of success/failure/results of PSP.

Box 2: Example of a BoTT tender process in South Africa

Part of the Government of South Africa's recognition of the urgent need to meet targets for water supply and sanitation services in rural areas led to the development of a strategy for PSP in water and sanitation in rural communities by the Department for Water Affairs and Forestry (DWAF). PSP was contemplated to speed up delivery and clear the large backlogs (estimated at 30-40 years) within 10 years, to reduce costs to the public treasury, and also to develop institutional capacity to ensure that beneficiary communities are willing and able to commit themselves to paying for, owning, operating and maintaining the infrastructure in the long term.

Various contractual arrangements were considered. The prerequisites for a suitable contract included the need to encompass the process and the design and construction of infrastructure (i.e. both "soft" and "hard" issues), and to include partnership between public and private sector, local government empowerment, community involvement, definition of responsibilities, flexible controls on timing and cost, institutional and social development, and a long-term commitment by the contractor. The DWAF had previously defined the responsibilities of the contractor to include issues such as mobilisation of communities, preparation of business plans, design, construction, operation and maintenance of infrastructure, transfer of infrastructure to local authorities with mentorship on termination of the contract. Use was made of the FIDIC handbook as a base document and modified to suit the requirements of the particular context. A Build, Operate, Train and Transfer (BOTT) contract was selected for four of the eight provinces where water and sanitation services had been identified as most deficient.

Each province was to have its own Contractor - a "Programme Implementation Agent" – and the DWAF put 4 BOTT contracts out to tender to consortia who had pre-qualified. Evaluation Criteria were issued to BOT tenderers along with Bills of Quantities, which contractors were expected to price, and these were evaluated by DWAF when considering the tenders. Tenders were adjudicated based on the structure of each consortium to ensure that successful tenderer reflected the policy of the Department in terms of PDIs having meaningful equity in consortium and a meaningful role in management and decision-making processes. Criteria were then evaluated according to a weighting system, whereby different components were given differential percentages - using a points system. Adjudication using system which awards points on basis of tendered price, assessment of proposals, PDI equity ownership. The contracts were executed by the highest "points" rated bidders in accordance with the published Tender Adjudication Criteria. The four successful bidders became PIAs for the four provinces.

The final steps entailed setting up the regulation structure (cf. Box 3) and issuing the contracts together with a list of projects to be implemented within them.

Source: Ramaema (1997)

2. METHODOLOGY

The initial searches for literature were executed using the BIDS indexes that search articles in academic journals. Similar searches were also carried out using the Edina Compendex and the BLDS (British Library of Development Studies), which was able to identify relevant projects and unpublished documents in addition to published academic articles. The indexes searched along with the years covered and keywords used to identify relevant studies are compiled as Appendix 1. The results (“hits”) of these searches were printed and filed, where possible together with abstracts.

In order to reduce bias from purely academic-based sources, internet searches were also carried out. Websites were identified by two means: firstly by use of a suitable internet search engine; and secondly by searching pages of international development agencies and the like. An outline of the internet sources searched is presented as Appendix 2.

A further search using the terms “private” and “privatisation/privatization”, was made of Loughborough University library catalogue. Reference was also made of the PPP bibliography previously compiled for the inception report of the “PPP and the Poor” research contract, of which this literature review forms part. Additional material, mainly comprising documents from international development agencies and overseas government agencies, was obtained from the WEDC resources centre and WEDC staff. It was hoped that the use of the website and additional informal sources would reveal the existence of unpublished material relating to the general theme.

A table of references from all sources was created to log the references obtained, and to avoid confusion over citations repeated in different searches. The table was also used to record the following details about each reference:

- General bibliographic details (author/s, year, title, publication/type of document)
- Case studies (cities/countries presented)
- Whether empirical data is presented
- Degree of usefulness (scale from 1 to 5, with 5 being the most useful)
- Status of retrieval of document
- Status of review of document
- Comments detailing main points and issues from document

Details were added to the table throughout the course of the review.

Based on the information obtained from the literature searches, references with high usefulness scores were given priority for retrieval and review. The criterion for including or excluding documents from the review was the explicit inclusion of private-sector participation in water and/or sanitation services. References were assigned a higher usefulness score if reference was made to poverty. Therefore, studies with no obvious private-sector participation, such as those relating to water and sanitation services in low-income communities in general, were logged but were not included. The decision of whether to include or exclude a document was made on the available information, which consisted of the title, the abstract, if available, and the content, if the document could be easily retrieved. Studies fulfilling the above criterion and appearing to contain empirical data were also given a higher usefulness score.

Documents obtained were reviewed, and the main points and information was recorded, with a short bullet-point summary also being entered on the table of references. The bibliography for each document reviewed was also examined, and references that appeared to be useful from the title were logged on the table and obtained according to their usefulness score. Although the only criterion for including or excluding references within this type of search was based exclusively on the title of the document, this was deemed to be the most practical way of searching for further references.

During the course of the review, reference was made to the notes made on each individual document, the references for which were extracted from the table of references. Many documents did not score high enough on the usefulness scale to be retrieved, and other documents – such as conference papers – presented difficulties for retrieval; however it was deemed important to include them in the table of references; and such references have been cited in an extended bibliography which can be found at the end of this paper.

3. PUBLIC-PRIVATE PARTNERSHIPS IN WATER AND SANITATION AND THE POOR

Key issues and questions

The following are the key areas defined for consideration within the theme of public-private partnerships in water and sanitation and their effects on the poor [please refer to our inception report also on the webpage- [MAKE LINK](#)]. Within each of these areas, a key question has been defined, and these are the questions to which specific attention will be given in order to discover whether such issues are being dealt with and such questions considered in the body of literature for this topic itself.

Contractual issues

How can the needs of the poor be incorporated in different types organisational relations through formal or informal contracts and their design, bidding and adjudication procedures?

Institutional issues

What is the nature of the relationship between different organisations, and how does this impact the poor?

Management issues

How can the PPP agreement be effectively managed for an optimum and affordable service provision to the poor?

Legal issues

What legislation exists with regard to PPP arrangements, and how can the poor gain access to it?

Risk & Liability

What are the potential risks to the private sector, public sector, and the poor under PPP arrangements; and how can these be foreseen, assessed, apportioned and mitigated?

Financial issues/Tariffs

How can financial levels agreeable to both the private provider and the users be determined; and what mechanisms can be used to ensure affordability for the poor?

Technology/Infrastructure

What kinds of alternative technology should be considered or promoted for PPP-based provision in low-income areas?

Sanitation

How can sanitation needs be integrated and promoted within the PPP model?

Participation/users' perspective

How can effective channels of communication be established between the poor and the private sector service provider under a PPP agreement?

Information

What information is required and by whom; and who is responsible for its provision?

Regulation

How can operators be regulated and how can a balance between their interests with those of users be struck, so that the interests of all parties are protected?

Water resources/Environmental management

How can PPP arrangements ensure the optimal use and management of hydrological resources and general environmental protection?

It is noteworthy that many of the categories of issues mentioned above may overlap with each other. The purpose was not to create fine boundaries between the issues but to provide a tool to focus on certain groups of issues at a time.

3.1 Pre-bidding phase

3.1.1 Contractual issues

Prior to the bidding process, the government must consider both the type of PPP contract that is most appropriate to the local situation, and consider the needs of low-income groups when making this decision. Although the reasons behind the choice of certain contracts in some countries are well-documented, these do not appear to reflect the needs of the poor, but rather the prevailing economic conditions of the country itself. For example, in Guinea, a lease contract was chosen to reflect the fact that this country has one of the least developed water supply systems in West Africa, and under a lease agreement the private partner is not required to commit investment funds (Brook Cowen, 1999). Similarly, in Trinidad & Tobago, a small country with poor water and sanitation infrastructure and limited capacity for regulation, a short-term management contract was chosen, with expectations that it will later lead to a long-term concession (Nankani, 1887). Silva *et al* (1998) believe that the type of contract chosen largely depends on different government objectives with regard to water supply and sanitation, which commonly include the following:

- expansion of (network) capacity
- expansion of distribution networks
- addressing of unaccounted-for water (UFW)
- tackling inefficiency

As noted in the previous section, certain regions of the developing world are much less attractive to the private water and sanitation sector due to the private sectors perceived increased risk in these areas. Under such circumstances, governments of such countries tend to offer contracts that present less risk to the private sector, such as management and lease contracts. These are then recommended for high risk areas, such as Africa (Silva *et al*, 1998). Similarly, Brook Cowen (1997a) considers further options for the poorest countries of the South to include the following:

- initial low-responsibility contracts
- simplified contracts
- contracting-out parts of the regulatory function
- increasing predictability and the use of discretion

Another approach is to underwrite the risks to the private operator and transferring the cost of underwriting the risks to the client and ultimately to the consumers. As mentioned in the preceding section, contracts in small towns are also less attractive to large-scale bidders. This may present a barrier to attracting private sector interest for contracts in smaller cities and towns. Rivera (1996) believes that developing PSP in small towns and provinces is very different from national and state capitals, and cities the case of Tucumán, Argentina, where an attempt to replicate the experience in Buenos Aires failed due to over-ambitious targets. Webb & Ehrhardt (1998) note that holding tenders and drafting contracts are expensive, and the costs are not reduced because the town is smaller.

3.1.2 Institutional issues

It is inexplicitly assumed in the literature that the appropriate government authorities of developing countries or individual cities determine whether to consider or engage the private sector in the provision of urban services. The literature does not appear to explore the influence that donor governments from the North, or IFIs, such as the World Bank, have on the promotion or otherwise of PSP, although it is generally recognised that IFIs promoted PSP as part of Structural Adjustment Policies (Calaguas, 1999).

It is frequently noted that the public sector and the private sector have differing perspectives and objectives with regard to the provision of urban services (Brook Cowen, 1997a; Johnstone & Wood, 1999a; Reijniers, 1994). There are also significant differences between corporate culture and public sector bureaucracy which have bearings on decision-making processes and time-scales (Reijniers, 1994). At a pre-contractual stage, these differences need to be reconciled in order to clarify the possibility of establishing a PPP agreement for the provision of water and sanitation services to the poor in order to avoid misunderstandings and reduce conflicts further into the contract (Brook Cowen, 1997a; Reijniers, 1994). Reijniers (1994) articulates the following priorities of each sector:

Public sector interests	Private sector interests
<ul style="list-style-type: none"> ▫ legislation, regulation and authorities ▫ political opinion and influence ▫ democratic decision-making processes ▫ minimisation of risks ▫ realisation of social goals 	<ul style="list-style-type: none"> ▫ returns on investment ▫ business risks ▫ anticipate markets and competitive developments ▫ realisation of corporate goals

The public sector's desire for improved, more efficient, and cost-effective services and their expectations for service improvement and expansion need to be reconciled with the private sector's aim to provide such services at acceptable levels of profit and risk. There is often a difference between what private companies

see as the minimum return necessary to enter into the contract, and what governments see as an acceptable level of profit (Brook Cowen, 1997a). Brook Cowen (1997a) notes that the public sector often has difficulty in accepting that the private sector should make a profit out of running utilities (Brook Cowen, 1997a). Some authors argue that the general objectives of the private sector do not necessarily imply a conflict with government objectives, as the private sector's delivery of a service on the basis of consumer demand for quantity and quality allows it to provide an optimal and cost-effective service (Calaguas, 1999). However, if the public sector's expectations are too high, as may be the case if the poor are to be served, then there may be a lack of interest in investment on the part of the private sector.

The fact that the public and private sectors have conflicting interests implies a more pressing need for organisation during the preparation phase (Reijniers, 1994). Palmer (1996) advocates a deeper commitment on the part of both sectors to recognising that collectively they can achieve more than their individual efforts by taking advantage of each other's areas of core competence, in order to hopefully bridge over the bureaucratic production culture of local government and the marketing culture of the private sector. Reijniers (1994) believes that the public sector should behave like a private company in terms of management and finance in order to form a mutually agreeable basis for co-operation with the private sector, as continual changes of policy is not an acceptable basis for partnership with the private sector (Reijniers, 1994).

If the current situation in a country does not appear to be compatible with an investment opportunity, the private sector may be discouraged from bidding for the contract. In order to present a viable and attractive operating environment for a potential private partner, countries may have to consider implementing domestic reforms prior to bidding, in order that the future PPP fulfil the objectives intended by the government (Rivera, 1996). The following areas have been identified as those to which attention is commonly given before initiating the bidding process (Nickson, 1997a; Rivera, 1996):

- ensuring a favourable and stable economy
- taking responsibility for regulation and efficiency
- ensuring good project design with realistic targets
- implementing structural and institutional reforms – especially social policy and the water sector

Internal changes made by governments prior to the bidding process will reflect the cause of the concern. For instance, in Monagas State, Venezuela, the municipalities formed an association, a *mancomunidad*, to pool W&S services and achieve the scale needed for a management contract to function effectively (Marino *et al*, 1998). Trinidad and Tobago's government made some changes including raising tariffs to more realistic levels before the bidding process in order to make the water facility more attractive to private bidders (Nankani, 1997).

The public sector is commonly seen as the weaker partner in potential PPP arrangements, impeded by financial constraints, weak institutional capacity and low enforcement capacity (Rivera, 1996). Therefore, some authors propose that the public sector take advantage of the private sector's participation in order to strengthen its own capacity (Nickson, 1997a; Rivera, 1996). In order for public administration and institutional transformation to become reality, it needs to be ensured that the private sector itself is entrepreneurial and resourceful, with adequate capacity and has well-trained professionals at its disposal (Cairncross, 1992; Johnstone & Wood, 1999a; Miles, 1994; Rivera, 1996). Other factors proposed by authors as the basis of a sound PPP include a strong political power base with support for the PPP and effort on the part of government to legitimise the PPP to the people, as PPPs often meet with public opposition (Blokland, 1999; Lyonnaise des Eaux, 1998; Nickson, 1997b; Rivera, 1996). Some authors also see the role of the public sector as responsible for providing financial support for the partnership (Nickson, 1997b; Rivera, 1996). The principal role for the public sector in a PPP arrangement will become one of monitoring and regulation of the level and quality of service, and in order for this to happen effectively, there is also for regulatory guidance from central government (Nickson, 1997b; Rivera, 1996)

On considering entering into a PPP agreement, the government needs to adopt policies of democracy and transparency, and rethink its institutional relationships (Briscoe, 1992). However, there were no significant study found on the influence of corruption during the decision making process regarding the PPP agreement nor have we found any significant work on tracing the links between political motivations and PPP. Governments tend to be slow to recognise other actors and resist accepting new players in an area that it has previously considered to be its exclusive domain (Collignon *et al*, 1999). Lyonnaise des Eaux (1998) recommends that links between formal and informal sectors be recognised, and that the possibilities offered by the informal sectors be utilised, as well as the links that the population has with both of these sectors. Similarly, Cairncross (1992) advocates the establishment of a formal decision-making arena with members from all stakeholder groups that can participate in PPP arrangements. With such significant input from the private sector, some authors reiterate that the public authorities must not overlook their underlying responsibilities for public health and environmental quality (Johnstone & Wood, 1999a).

The literature concerning institutional relationships within PPPs predominantly focuses on the relationship between public and private sector partners; and little attention is given to the poor as a stakeholder or organisations that can act as representatives for the needs of the poor within a PPP arrangement. There is also a lack of empirical studies exploring linkages between the large operators and the small profit or non profit based informal organisations in the context of PPP. Collignon *et al* (1999) advocate working with NGOs and CBOs in order to involve the poor in the process. In some instances, NGOs and CBOs are categorised as private sector rather than civil society, especially when they acquire funds. Bennett (1998) notes that non-profit NGOs are often perceived as neutral actors, but should be considered in the same terms as private firms when they are awarded contracts and assessed in terms of financial viability, as they need to recover their costs in the same way as a private firm in order to survive.

3.1.3 Management issues

One of the principal reasons for engaging PSP in the water and sanitation sector is to increase levels of efficiency and quality of service. Public sector management is seen by many authors to be inefficient, and Estache (1994) suggests the following reasons for why such failures are unique to the public sector:

- ambiguous goals and possible changes of regime
- managers to not control staff levels or tariffs
- political interference

Spiller & Savedoff (1999) emphasise the role of the political economy of the water sector, and note that the public sector remains inefficient, despite high levels of staff and resources; although there may be a need to distinguish between the failure of management systems *per se* and the inability to accompany current rates of urban growth, especially in Africa (Collignon *et al*, 1999).

At a pre-contractual stage, therefore, city authorities must begin to decide how the contract(s) that they intend to offer to tender to the private sector will be managed. Such decisions will be based on issues of strategy, competition and how the public authorities wish the city's services to be organised. Cairncross (1992) believes that these issues are crucial to PSP agreements, and need to be emphasised at an early stage. Reijniers (1994) articulates the following pitfalls in the organisation of PPPs that need to be mitigated at a pre-contractual stage:

- project not supported by company management
- project ill-defined
- inadequate / poor planning
- lack of organization
- lack of control
- ineffective management

A major issue to be considered by the public authorities will be the degree of monopoly and competition that will be offered to the private sector. Johnstone & Wood (1999a) note the dangers with monopolistic provision of water and sanitation under private sector control:

- over-exploitation and miscallocation of raw water supply
- health and environmental externalities from wastewater
- under-provision of basic needs for poorer households

Competition is usually regarded as essential for PSP, as it is the means by which the private sector strives to offer an improved service at lower costs. However, a unique feature of the water and sanitation sector is that it is almost a "natural" monopoly, in that competition is difficult to introduce (Webb & Ehrhardt, 1998). This has been a problem encountered in the privatisation existing public utilities, as the distinct lack of commercial objectives and rival competition often leads to little improvement in levels and quality of provision (Estache, 1994).

Many authors agree that it is almost impossible to have competing providers in the water and sanitation sector, especially where common infrastructure would be used (Nath, 1994; Rees, 1998). Unlike telecommunications or energy, it is almost inconceivable to have more than one water or sewerage network in competition. Even shared infrastructure, known as "common carriage", where providers pay the owner for use of the network, is difficult to implement in practice (Rees, 1998), although Webb & Ehrhardt (1998) believe it may be viable if existing utilities are very sparse or inefficient. Acknowledging that competition is particularly difficult to introduce into the water and sewerage sector, Webb & Ehrhardt (1998) identify the possible types of competition that could be introduced, and stress that these should not be ruled out without consideration, believing that it is better to build in potential for competition than locking in monopolies for long periods of up to 30 years.

- competing networks
- private supply

- retail competition
- common carriage competition

The most common way of introducing an element of competition into the water and sanitation stage is to divide the area to be served under PSP into smaller regions and offer separate tenders for each area. For instance, in Mexico City the municipal government divided the city into four zones for separate bids, in order to reduce the monopoly and increase competition (Hazin, 1998). In the UK, the former public water authorities were converted into ten regional private companies, in order to be able to make performance comparisons as a substitute for true competition (Neto, 1998). As Rees (1998) points out, under such arrangements, competition to the *users* is limited; although in the UK, one customer managed to switch to a different provider, but only because he lived on the boundary between the areas of two companies (Rees, 1998). These solutions do not address the basic difference in terms of the responsibility and execution of the services.

A further issue to be considered is how the new water companies themselves will be organised, in order to prevent the relationship breaking down and the public sector having to assume the onus of rectifying the situation, as in the case of Palm Bay, Florida (see box 9). Special conditions can be considered for water and sewerage providers that may be articulated at the tendering stage. For instance, in the case of the UK, regional water and sanitation companies operate like other public limited companies (plcs), yet are subject to unique constraints that do not apply to others; notably that they are unable to freely price their product and enter into bankruptcy. While special conditions may be imposed in order to protect both the government authorities and the end users, Blokland (1999) stresses that water companies must still be subject to corporate law just like any other company for purposes of accountability and transparency.

An issue often disregarded at the pre-contractual stage is the position to adopt vis-à-vis the informal sector. As Devas (1996) notes, the informal private sector is quick to step in when a certain area is not served by the official supply. The informal sector, unlike the formal sector, also has no restraints in terms of cost or quality, and this is an issue in which the authorities may wish the tenderer to intervene, in order to assure the quality and price of water to those who are not reached (Devas, 1996). Solo (1999) also describes how the “informal” or “small-scale” private sector may be geared to better meet demand, as informal providers are more flexible and may be better able to cater to the needs of low-income groups.

3.1.4 Legal issues

The lack of legal land tenure is the main hurdle to extending water and sanitation infrastructure and services to poor groups, as this is generally regarded as a prerequisite for the installation of permanent infrastructure (Johnstone & Wood, 1999a; Lyonnaise des Eaux, 1998). Government authorities are usually unwilling to condone or legalise informal settlements, and private providers refuse to invest in infrastructure for areas that may be evicted at a later stage. Furthermore, the role of the private sector in water and sanitation is to provide a service, and does not extend to the formalisation or regularisation of land tenure (Lyonnaise des Eaux, 1998). This results in settlements without regularised land tenure often being excluded from provision of water and sanitation services, and, as such settlements are often among the poorest, many low-income residents are no better off under PPP arrangements. Although many sources recognise the problematic issue of the implications of insecure land tenure for water and sanitation provision, the practice to date has been to avoid such areas, and consequently the literature makes very little progress as to how to address this issue in practice (Lyonnaise des Eaux, 1998). Cairncross (1992) sees the only solution as the increased regularisation of non-secure tenure for low-income groups, as has been seen in many cities in the South, and proposes the inclusion of land tenure within the framework for strategic planning that also makes provision for water and sanitation services. At the tender stage, the city authorities must be prepared to acknowledge the situation of land tenure in the different areas of the city, and draw up an official framework for service provision in informal or illegal areas, if any, that it wishes the private sector to serve. The private sector will also expect to be informed of the land tenure situation in the city, particularly if it is interested in providing services to informal areas in order to capture that sector of the market (Lyonnaise des Eaux, 1998).

3.1.5 Risk & Liability

Public-private partnerships in the water and sanitation sector present many kinds of risk to both parties, as well as to other stakeholders, including users, NGOs, lenders etc. Of the various different PSP models outlined in the first section, each presents different levels of financial, contractual and operational risk, based on different levels of investment and responsibility (McCoy-Thompson, 1998; Rees, 1998). The following table summarises some of the risks from PSP to both the public and the private sector under a PPP agreement.

Risks to the public sector	Risks to the private sector
<ul style="list-style-type: none"> ▪ Monopoly means that the private partner has the upper hand ▪ Job security of public employees ▪ Bankruptcy ▪ Loss of control over assets in divestiture-type projects ▪ Weak regulatory framework 	<ul style="list-style-type: none"> ▪ Excessive control/restriction by local government ▪ Infrastructure assets are “sunk”, therefore their quality cannot be assessed, nor can they be removed or deployed for other purposes ▪ Political interference affecting quality levels and targets ▪ Currency fluctuations and depreciation ▪ Investment must be made up-front especially with BOO-type projects ▪ Low revenue collection ▪ Lack of government credibility as regulator or contractual partner ▪ Political instability
(Nickson, 1998; McCoy-Thompson, 1998; Webb & Ehrhardt, 1998)	(Brook Cowen, 1997a; Nickson, 1998; Rees, 1998)

Most international bidders spread risk for large-scale contracts by forming consortia with local companies, as has been seen in Buenos Aires and La Paz for example (Rees, 1998; Silva *et al*, 1998). However, if the private company assesses the risks of engaging in a partnership as high, it will be less willing to commit investment. This is commonly the case with the poorest countries, commonly characterised by limited infrastructure often in poor state of repair, low revenue collection, weak government capacity and political instability. Such countries, for example those in Sub-Saharan Africa, are perceived as too risky to the private sector and are those least likely to attract investment (Brook Cowen, 1997a; Silva *et al*, 1998).

In such cases, public sector co-financing is a possibility depending on the specific economy, as unstable economies need PSP to first develop management and operational skills supported by government finance (Rivera, 1996). Low-risk contracts, such as service and management contracts are appropriate for countries considered to be risky, so that private partners do not commit investment funds until they are more confident of earning adequate returns (Brook Cowen, 1997a). This approach has been taken in a number of countries considered to be high-risk for private-sector contracts involving investment. For example, in Mexico City, the unstable economic-political climate led to the tendering of service contracts rather than concessions (Hazin, 1998). Similarly, in Gaza, a short-term contract was offered due to the unstable political situation and lack of information on the state of the infrastructure. A management contract was chosen due to its great flexibility, and range of more committal options on termination (Saghir *et al*, 1998).

There is a lack of knowledge available on how the risk to the financial institutions influences the risk distribution among the operator and the client. An analysis of contracting arrangements involving financial institution needs more attention.

3.1.6 Financial issues/Tariffs

A key issue that needs to be decided upon at the pre-contractual stage is finance, in terms of clarifying investment responsibilities for public and private actors, and how tariffs are to be structured. Although planning for water supply often focuses on efficiency, benefits to society as a whole and equity, it may sometimes overlook certain aspects of supply and pricing that can be important to the poor (Fass, 1993). Initiatives to benefit the poor are usually directed towards issues of appropriate technology and government subsidies, but also need to be considered within the overall framework of financial responsibility (Cairncross, 1992).

Under private sector management, utilities seek to recover their full costs, and in addition generate a surplus profit for the provider. Collignon *et al* (1999) note that economic analyses are seldom made for water and sanitation, unlike other utilities, as the benefits (life and health) are often not measured in economic terms. Full cost recovery implies that water must be priced to reflect the cost of production. Some contracts concentrate on the recovery of operation and maintenance costs only, as tariffs would be too high if all costs were recovered (Nath, 1994). The ability to collect user charges (i.e. levels of payment) is another factor that

determines the level of cost recovery that can be expected (Feldman, 1993). As many publicly-run water supplies relied on government subsidies to make the service affordable to the poor, there is the notion that full cost recovery will harm the poor. However, as argued by Estache (1994), full cost recovery is beneficial to all users, especially those with an inadequate service or no service, as it provides the resources to expand networks and improve service (Estache, 1994). Nickson (1997a) admits that privatisation does usually mean higher costs; but believes that people are often willing to pay more if it means a better service, as verified in a willingness-to-pay for water study undertaken in Karachi (Altaf, 1994).

At present, water supply and sewerage are funded by income from user tariffs and capital (e.g. loans, government grants) plus revenue from user metering for water and charge for sewerage based on water charges. Nath (1994) proposes the following alternative cost structures for attaining full cost recovery from water and sewerage, which may be significant in determining the rates charged from low-income people:

- charges according to the number and/or size of taps
- rateable value of property, so larger properties pay more water/sewerage rates than small properties
- finance capital investment through taxation rather than user charges

Nath (1994) notes that the possibility of cost-recovery is better if user charges are lower. It is difficult to reduce costs for certain necessary components, as infrastructure construction costs can only be lowered if materials and labour are made cheaper. Nath also sees the need to distinguish between capital and operation and maintenance costs, as not all costs are recoverable. Recoverable costs include capital and operation and maintenance costs (also debts and interest), but the cost of these should be expected to be spread over the life of the contract. Therefore, Nath believes that local governments should ensure private providers a reasonable flow of funds in order that the operator can make a profit without immediately raising charges to high levels in order to recoup costs. There is a lack of general understanding about how significant is the cost of debt financing and transaction cost in the context of the PPP and what measures can be taken to reduce such costs.

Another issue that governments need to consider at the pre-bidding stage is how tariffs can be structured to benefit low-income groups and how institutional responsibility will be allocated for this task. Tariff structure often changes under PPP arrangements to reflect the cessation of government subsidies and full cost-recovery, as was the case in Mexico City, where the existing tariff structure was inadequate and tariffs were raised, but remained under government control (Hazin, 1998). However, if tariffs rise several-fold under private-sector management, this may have a negative effect on low-income people. Although tariff structures designed to benefit low-income people can be useful, many authors argue that these do not benefit the poorest people, who usually lack access to the state supply anyway and therefore get no benefit (Brook Cowen, 1997a). Webb & Ehrhardt (1998) believe that it is better to achieve social objectives through competitively neutral mechanisms such as subsidies and general taxation rather than reduced tariffs. This approach was taken in Santiago de Chile, where the government revised its social policy in order to facilitate access of the poor to water and sanitation services in poor and marginal settlements, and provided subsidies and loans to low-income consumers (Rivera, 1996).

Within the overall framework of financial responsibility, finance is considered by many authors to be a difficult issue in the water and sewerage sector, as, unlike other utilities, it generally fails to generate the volume of funds needed for further investment (Rivera, 1996). If cost recovery is ineffective, this may lead to over-dependence on government grants (Nath, 1994). The level of cost recovery in turn has significant implications for the level of service that can be provided and the extent to which the network can be expanded, both of which may affect low-income groups. Availability of long-term finance then may become a constraint, as private-sector providers do not own the assets (except some PPP arrangements) they manage and thus have no collateral or security for loans (Rivera, 1996). Furthermore, Haarmeyer & Mody (1998) point out that commercial banks have little interest in lending for water and sanitation projects due to political risks, small scale, weak local government credit ratings and high transaction costs. Thus, most projects are financed on a *limited recourse basis*, which use project cash flows and assets as security for lenders, although the sector is seeing a shift to *corporate (balance sheet) financing*, which requires a strong financial situation (Haarmeyer & Mody, 1998). In this way, Colombia attracted private capital through project finance, instead of the concession model requiring up-front investment followed in other Latin American countries, such as Argentina (Gray, 1997). The aim for a water and sanitation utility under a PPP agreement is to be financially sustainable (i.e. to operate without subsidies or grants), and in order to achieve this, each partner needs to undertake its own financial viability analysis and reassign costs in case of imbalance in order to make the arrangement attractive to both partners (Bennett, 1998; Nickson, 1997b).

3.1.7 Technology

Appropriate technology for low-income groups is not an issue that is specifically likely to be discussed at the pre-bidding stage. However, the literature shows that some private operators are interested in alternative

technologies, and information is being collated on different models and their applicability to areas with different situations, for instance, areas without secure land tenure.

3.1.8 Sanitation

Sanitation is considerably less procured within PPP than water. There are few examples of PSP in sanitation, and very few unconnected with water. An effective sanitation solution is essential once water supply has reached 40 litres per person per day (Lyonnaise des Eaux, 1998), so is therefore an issue that needs to be dealt with at the outset of the PPP process.

Part of the problem is that sanitation is a far less attractive proposal for private operators than water. The installation of sanitation facilities is much more complex in comparison with water supply; although low-cost technology is available and affordable to many households (Lyonnaise des Eaux, 1999?; Silva *et al*, 1998). The only significant levels of private sector involvement in sewerage have been seen in South-East Asia (Malaysia and the Philippines) and Latin America due to these countries' well-developed water sectors and greater prosperity in relation to the rest of the developing world (Silva *et al*, 1998)

The other part of the problem is due to a lack of demand on the part of users, resulting from a lack of awareness of the health risks of inadequate sanitation facilities and thus leading to a lack of demand and willingness to pay for this service, especially when many people have managed without it for years (Cairncross, 1992; Lewis & Miller, 1987; Lyonnaise des Eaux, 1998). As private providers will only become involved in sanitation provision on the understanding that users will cover the full cost, a lack of demand on the part of the users translates into a lack of provision in practice. However, a constraint to potential users in sub-Saharan Africa was the high cost of installation of infrastructure and treatment facilities, and a lack of willingness to invest in permanent sanitation facilities, together with the predominance of existing on-site facilities (Lewis & Miller, 1987). There is also a much greater willingness to pay for water than sewerage due to the greater perceived need for water (Silva *et al*, 1998). Some authors see the need to develop water *in conjunction with* sanitation, rather than as two distinct services (Cairncross, 1992; Lyonnaise des Eaux, 1999?). This can be done at two levels – firstly, integrate responsibility for both water and sanitation provision in the tender in order to oblige the private sector partner to become involved in both; and secondly, offer water connections to users on the condition that they also purchase water and sewerage connections or sanitation facilities. Other suggested solutions are the promotion of low-cost solutions and more effective marketing of sanitation facilities. Cairncross (1992) identifies a crucial need for education and awareness-raising in order to encourage people to prioritise sanitation services. Cairncross (1992) believes that the government is responsible for education and awareness-raising, and Calaguas (1999) notes the lack of private sector interest in sanitation and hygiene promotion, although this is an important part of water supply.

3.1.9 User's perspective

The perspective of low-income users is an important factor to take into account when considering the type and level of service to be provided; as ultimately, it is the poor who will decide whether to “purchase” the facilities and services on offer or not. [However, in many situations the option of saying “no” by the poor is non-existent]. At a pre-contractual stage, if the planned service is to meet the needs and means of users, their perspective will have to be taken into account in the planning and design of services. The level of service desired by people – for instance, standpipes or household connections - depends on their circumstances and their willingness and ability to pay (Briscoe, 1992). Consumer habits also have a very great influence on PSP, as was seen with the culture of non-payment that had arisen as a political protest in black townships of South Africa (Tandy, 1997). At this initial stage of the process, the needs of the poor must first be determined in order that they can be adequately considered. Lyonnaise des Eaux (1998) recommends the use of local NGOs in carrying out surveys to determine the needs of the poor to be included within contractual agreements.

Lyonnaise des Eaux (1998) emphasises a demand-responsive and consumer-oriented approach, which reconciles the needs and means of people with the service provided in order to produce solutions that are in line with users' requirements and capacities. This involves recognising low-income users' perceptions regarding the level of service they want and expect, the level of willingness to pay (WTP) and ability to pay (ATP), and users' preferences regarding billing and payment. It has been demonstrated that many low-income people budget on a *daily* rather than a monthly or two-monthly basis because they are used to collecting and paying for water on a daily basis, which allows them to precisely monitor their consumption and expenditure. Low-income people may therefore have reservations about paying a high monthly charge billed in arrears, as they may perceive that post-consumption billing will encourage them to use more than

they can afford. Low-income people may also have difficulty making the initial investment for the connection cost (Lyonnaise des Eaux, 1998). Lyonnaise therefore recommends that WTP and ATP surveys are carried out before contracts are drawn up, along with both qualitative and quantitative surveys of levels of consumption, distance from supply and preferred pricing and payment methods. However, it needs to be pointed out that efficacy of such surveys where they have been carried out is not yet demonstrated considering the cost (time and money).

The prospect of services being run under a PPP agreement can also attract opposition from the people, as it is often considered the most controversial service to be privatised in the eyes of the people (Spiller & Savedoff, 1999; Tandy, 1997). People feel safe with a publicly run water supply, and conflicts may arise from people's perceptions that private companies will make excessive charges for water and sanitation services (Shanker & Rodman, 1996). Lyonnaise des Eaux (1998) sees widespread awareness-raising and education as the key to gaining the support of public opinion for PPP arrangements, which in turn influence political decision-making. In Northern Province, South Africa, against the backdrop of a tradition of refusal to pay utility bills, intensive communication through public meetings, talks on local radios and interaction with traditional leaders was undertaken in order to gain public support for new token-operated standpipes (Lyonnaise des Eaux, 1998). Education or awareness-raising may have been beneficial in Mexico City, where repeated price increases under the service contract aroused opposition to private-sector participation, allegedly due to users' failure to see that price increases reflected increased consumption and wastage deterrent (Hazin, 1998).

The private sector may be reluctant to engage in service provision to low-income areas through perceptions that poor consumers fail to pay bills, or because they believe that infrastructure will be vandalised in low-income areas, leading to potential losses for the private operator (Lyonnaise des Eaux, 1998). The extent to which such perceptions are founded is unclear. Research shows that people are willing to pay for a higher standard of water supply when they are inadequately served. A study undertaken in Pakistan showed that households with inadequate water supplies supplemented service at their own expense by investing in tanks for storage and wells and pumps for an alternative water supply. A survey indicated that such people were willing to pay around 25-30% more for an improved public supply in terms of quality and greater reliability. The fact that the people were unwilling to commit more than this proportion indicates that they are sceptical about promises of an improved public water service. In theory, the people's current additional expenditure on alternative water supply could be put towards improvement of the public system, which over time would eliminate the need for an alternative and lead to cost-savings in the long run. The author notes that mechanisms to promote private investment and inspire consumer confidence would be needed if people were to be charged more for the public supply on the understanding that improvements would be made (Altaf, 1994).

Some authors note that low-income people are often labelled as a single group, and that their heterogeneity is seldom recognised. The heterogeneity of low-income people has important implications for their water and sanitation needs and requirements (for example, based on cultural factors), and these implications must be analysed and incorporated into the planning and design of infrastructure and services (Lyonnaise des Eaux, 1999?; Spiller & Savedoff, 1999).

3.1.11 Information

In addition to the information defined above with respect to financial issues and user perceptions, it is useful for the government to collect other types of information before putting out contracts to tender, in order that potential private partners are informed about the situation that they are taking on. In order to implement a contract in which low-income users are able to voice their opinions about the level and type of service they receive, it is also useful to develop communication and feedback mechanisms.

Different sets of information will be required by the public and private sectors before committing to a PPP arrangement. The key factors in choosing a PPP option will depend on the objectives of the public sector, and the following analyses will need to be done before deciding to proceed with the tender, and if so, in order to decide which option to follow (Brook Cowen, 1997b):

- state of the utility
- existing regulatory framework
- stakeholders (supporters and opponents)
- financial viability of alternatives

The private operator will require different sets of information prior to the bid, in order to be able to calculate whether the investment is worthwhile or not. Box 4 gives a detailed description of the issues that the private

sector will need to investigate, and the following studies are usually ones that the private operator will need to carry out prior to agreeing the contract (Lyonnaise des Eaux, 1998):

- rate of population growth: it is necessary to document individuals/households for billing purposes, and have an idea of the rate at which the population is expected to grow over the duration of the contract.
- land tenure situation in all areas to be served: this is necessary in order that risks be assessed and alternative arrangements (such as temporary water pipes) be considered for areas without secure tenure.
- appropriate technical solutions for water supply and sanitation: it is necessary to know how the population currently obtains its water and disposes of its waste and what it expects of the new service.
- levels of WTP and ATP among users: detailed surveys and audits need to be carried out for specific settlements within a city, in order to gather information about households' income and budgets and gauge ability and willingness to pay.

The diligent execution of these surveys is important, as estimations of individual demand and total number of inhabitants to be supplied are often poorly defined prior to implementation. This may lead to different levels of revenue from those that private operators expected and possibly in the inability to fulfil targets set when the contract was drawn up (Collignon *et al*, 1999). Lyonnaise des Eaux (1998) recommends that surveys should be carried out by (psycho)sociologists, ethnologists, local consultants and the like, and that methods should include surveys, interviews, observations, audits and attitude studies.

Box 3: Institutional, social and technical factors to be documented and considered before private-sector intervention in the water supply and sanitation sector in low-income settlements

Institutional factors

- nature of land tenure and degree of security
- extent and nature of existing formal administrative characteristics (e.g. address structure)
- potential source(s), nature and scale of public financing
- scale and nature of political involvement

Population factors

- level, nature and stability of income of the population
- existing arrangements and practices for water and sanitation
- scale and nature of social organisation including links with NGOs
- potential community financing
- social characteristics of local population (language, ethnicity, culture, gender relations, etc) and social status (level of education etc.)
- existing infrastructure and supplies for water and sanitation, levels of consumption, and price paid for services
- current service payment practices and attitudes towards payment

Technical factors

- size of the private sector provider and ability to accommodate additional capacity
- demography and population density (current and forecast)
- geometric characteristics and extent of planning of the urban fabric (and implications of this for installation of infrastructure)
- proximity, capacity and quality of possible resources
- topography and existing drainage arrangements
- state of existing infrastructure
- existing alternative solutions (and potential for continuing these)
- technical opportunities for links with related sectors

Source: reproduced and adapted from Lyonnaise des Eaux (1999?) *Alternative Solutions for Water Supply and Sanitation in Areas with Limited Financial Resources* (mimeo).

3.1.11 Regulation

Although government regulation of privately-provided water and sanitation services only comes into effect once the PPP contract becomes operational, a regulatory structure may be considered prior to the bidding process. The design of a regulatory framework is crucial for effective regulation and the smooth running of the PPP (Rivera, 1996; Spiller & Savedoff, 1999). The government may wish to define in advance the nature and structure that a regulatory body will take, as the design of a regulatory framework influences lower costs through efficiency (Komives, 1998). Not all governments will wish to consider regulatory arrangements prior

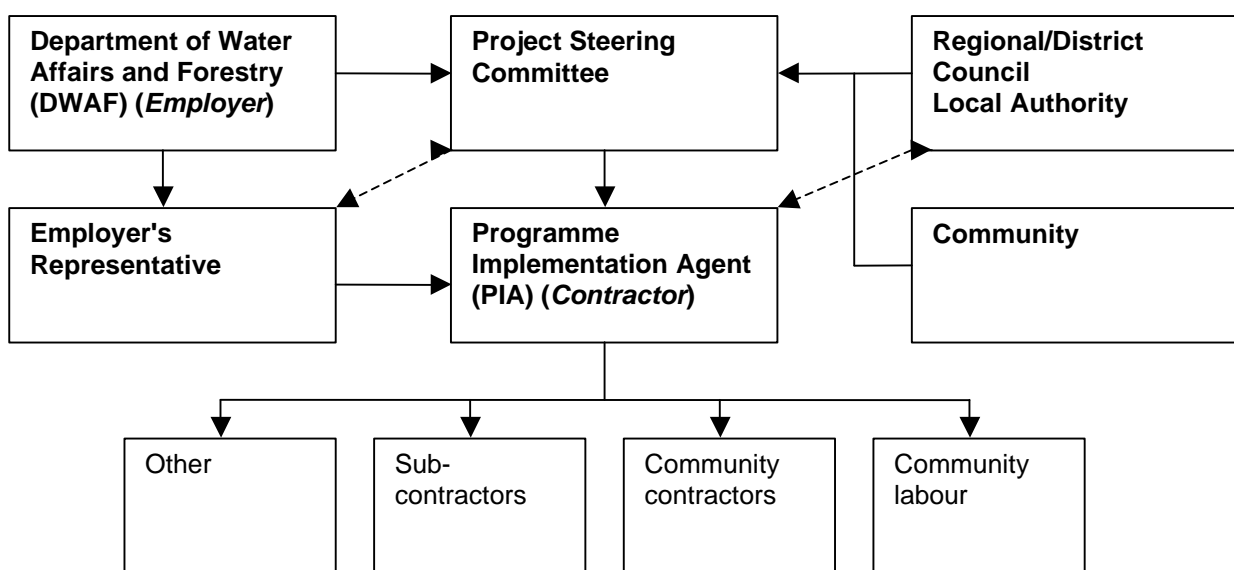
to bidding, as in the case of Trinidad and Tobago, where the government attracted PSP before building a framework for regulation (Nankani, 1997).

A decision that may be pertinent to make at the pre-bidding stage is whether the state will take responsibility, or whether an independent body will be appointed or formed, to regulate the private provider. It is commonly presumed that the passing of water and sanitation services to the private sector will relieve government authorities of the burden of direct provision, allowing them to assume a role largely consisting of monitoring and regulation. However, the capacity of government authorities to take on this role, especially in cases where the public sector was unable to cope with adequate service provision, should be questioned (Nickson, 1997a). Clear regulatory guidance may be needed in order to build capacity within government authorities if they do intend to take responsibility for regulation (McCoy-Thompson, 1998). Furthermore, it may be more beneficial to appoint an independent body for regulation so that the regulator is neutral, instead of a part of one of the partners. In the UK, a national independent regulatory body was formed (Neto, 1998). In Buenos Aires, a new autonomous regulatory agency was set up specifically to regulate the concession contract in the capital, and not in other provinces (Rivera, 1996). In France, there are six river basin agencies (*Agences de l'Eau*), which are financially autonomous and affiliated to the Ministry of the Environment (Neto, 1998).

The primary main aim of regulation of is to control the quality, level and cost of service provided by the private partner. As discussed above, a lack of competition may lead to a monopoly situation, which leaves the private sector in a position to abuse pricing and level of service and the regulator must therefore ensure that the private partner does not exploit its monopoly situation and provide a service which is acceptable in terms of price and quality (Collignon *et al*, 1999; Nath, 1994; Nickson, 1997a). There is also a widespread concern that increased earnings due to the reduction of costs from gains in efficiency may go to higher profits for the private company rather than lower costs to the consumer (Nath, 1994). This issue can be successfully built into the regulatory framework, as was done in the case of the UK, where private companies were entitled to keep excess returns generated by increased efficiency only when they had fulfilled all other obligations in their contracts including the setting of a price acceptable to consumers (Neto, 1998). There is potential for further progress to be made in this area, as Webb & Ehrhardt (1998) note that there has been much attention to improving regulatory structures and functions, but little consideration of how monopoly power can be reduced.

In South Africa, a team of representative of the Department for Water Affairs and Forestry was set up to regulate the work of each of the four Project Implementation Agents (contractors) (Ramaema, 1997). Box 4 illustrates the structure of the regulatory system in this case.

Box 4: Diagram showing structure of monitoring and regulation structure in BOTT contracts operated by the Department of Water Affairs and Forestry in South Africa (DWAF)



PIA is required to structure activities at district council level and at project council level - DWAF has the burden of monitoring the performance of the PIA as well as providing a sound contractual basis for applying the remedies should the PIA not perform. Key performance indicators have been identified which cover all phases of the project and which are linked to project milestones, for example:

- Business planning

- Area business planning
 - Institutional and social development activities
 - Design activities
 - Construction activities
 - Sanitation
 - Operation and maintenance
- PIA has to report monthly against all these indicators.

Reproduced from Ramaema (1997)

3.1.12 Water resources/Environmental management

Integrating private sector responsibilities within the overall framework of water and natural resources management is an issue that governments should consider at an early stage in the PPP process. The principal issues with regard to water resources management is how to control the private sector's management of water resources, as profit-making entities may exploit water resources for financial gain at the expense of their proper protection and conservation. Inadequate provision of water and inadequate wastewater collection and treatment and sanitation facilities can lead to groundwater pollution, which needs to be closely monitored, and if private companies are held responsible for environmental management resulting from wastewater disposal, then they may be discouraged from serving a greater number of users (Johnstone & Wood, 1999a).

Many authors argue that water should be recognised as a purely commercial or economic good and managed as such, that is, with a "market price" attached, in accordance with the principles of environmental economics (Lyonnaise des Eaux, 1998; Neto, 1998). The economic value of water is thought to promote its efficient use, as private companies will generally be charged for raw water and will wish to reduce unaccounted-for water (Johnstone & Wood, 1999a). However, Webb & Ehrhardt (1998) believe that it is better to integrate environmental objectives into non-competitive mechanisms. Rees (1998) believes that water and sanitation provision cannot be separated from water resources management as a whole, and governments need to consider how they will incorporate water resource conservation and protection within PPP contracts in order to achieve sustainable water resource and environmental management in private hands. Bennett (1998) believes that the conventional command-and-control approach does not foster the appropriate and far-reaching behaviour and institutional changes required for sustainable resource management. In some countries, such as Chile and Mexico, responsibility for natural resource management has remained with the government, but this has not necessarily led to the imposition of a market value on water or its efficient use. In many cases, private providers are not charged or undercharged for raw water, as in Mexico City, where the price charged to the private provider does not reflect the scarcity of water, and in Manila, where the government makes no charge, and even gives the private provider priority over other users, such as farmers (Easter & Hearne, 1995; Johnstone & Wood, 1999a). Water resource management is especially significant in areas where there are water shortages, such as Mexico City and Gaza. In Mexico City, the shortage of water resources and pollution is an increasing problem, but one that has not been addressed within the service contract (Hazin, 1998). In Gaza, the primary water source is a shallow aquifer being quickly depleted due to high population density, and its conservation is a crucial issue that the government cannot afford to omit from a PPP contract (Saghir *et al*, 1998)

3.2 Procurement phase

3.2.1 Contractual issues: how the contract can be drawn up to incorporate the needs of the poor

At the stage of drawing up the contract with the private partner, the government needs to consider how the contract can incorporate the needs of the poor. The government must consider the specific provisions relating to service provision to low-income groups that it wishes to be included within the contract with the private operator, in order that the private partner is contractually obliged to address these. Box 5 gives some examples of different types of measure that have been written into contracts to ensure provision to low-income groups.

Box 5: Large-scale PPP contracts containing specific conditions to benefit low-income consumers

Casablanca (Morocco)

- specific provisions for facilitating access to conventional services for low-income customers.

Manila (Philippines)

- coverage rate specified in contract.
- low flat rate for water.
- spread costs for low-income customers.

Santa Fé (Argentina)

- regulator defines areas with limited resources and level of service to be provided in these areas.
- water supply is metered and charged to Province of Santa Fé with a 40% reduction on the general price (if meters cannot be read, consumption is estimated at 40 litres per person per day).

Source: Lyonnaise des Eaux (1998).

Lyonnaise des Eaux (1998) identifies the following considerations that should be explicitly articulated within the PPP contract, and will have a bearing on the type and extent of provision to low-income areas:

- description of distribution facilities to be installed
- description of levels of service to be provided
- description of distribution methods planned
- specification of method to be used for calculating coverage rate
- method for determining conventional/non-conventional distribution areas
- description of minimum urban structure needed for conventional distribution
- specification of limits of private operators' obligations
- means to be used for non-payment
- specification of financing arrangements for expansion
- conditions for renegotiating tariffs
- specification of tariff structure
- payment conditions that leave private operator with flexibility regarding poor areas
- conventional networks only in fully regularised land
- development plans in case the situation changes and renegotiation is needed

A survey by Lyonnaise des Eaux (1998) has shown that recent large-scale private sector contracts rarely include explicit terms for the provision of water and sanitation to low-income customers. Lyonnaise defines four areas within which special conditions for low-income groups could be contained:

- type of supply and level of service: different types of system could be considered for areas where they might be more suitable and/or cost-effective, such as simplified supply methods in areas without regularised land tenure. For instance, in Buenos Aires, technical and institutional solutions have been used to adapt services to local conditions, making services more affordable to low-income groups.
- financial conditions: the cost of upgrading and/or extending networks could be considered to be distributed amongst all users/partners, rather than charging lower-income groups the full costs for initial connections.
- tariffs: tariff structures should be formally established in the contract, in order to prevent sudden or large increases that may be detrimental to poor groups. In Limeira (Brazil), tariffs are structured so that the price per m³ increases with increased consumption – the first 15m³ are priced at R\$ 0.22/m³, the next 15m³ at R\$ 0.55/m³ and any consumption exceeding 30m³ is then charged at R\$ 0.83/m³.
- payment arrangements: payment arrangements could be modified to suit budgets and cultures of low-income households. For example, in Manila, low-income customers are able to spread the cost of connection and consumption charges.

Box 6 illustrates the mechanisms that were written into the La Paz-El Alto concession for service provision to the poor.

Box 6: Conditions of contract for provision of water and sanitation to low-income residents of La Paz-El Alto, Bolivia

The La Paz-El Alto concession is an example of a contract that has been designed to extend water and sanitation infrastructure and services to low-income areas and contains specific provisions for this end. Bolivia is the poorest country in South America and both La Paz and El Alto (satellite city in the outskirts of La Paz) are settled by low-income groups including recent migrants. The La Paz-El Alto contract is based on

a typical 25-30 year concession containing stipulations for predefined coverage and quality targets with exclusive (monopoly) rights within a predefined service area within which it is protected from competition (but does not have exclusive rights).

Rather than predefining the level of tariffs it would set without specifying the number of connections it would make, the concessionaire stipulated the number of new water connections it would make for the pre-specified tariff.

The La Paz-El Alto contract specifies the following service and quality targets:

- 100% water coverage by the end of 2001 (current level – 87%)
- 90% sanitation coverage by end 2021 (current level - 48%)
- in-house water connections only
- ceiling on connection fees (\$155 for water; \$180 for sanitation)
- various service quality levels
- inputs at contractor's discretion
- tariff for combined water and sanitation service

The La Paz-El Alto contract is innovative in that it contains an *expansion mandate* which contractually obliges the concessionaire (Águas del Illimani consortium) to extend provision to certain low-income areas that it may otherwise have been unwilling to serve. Within this area, the concessionaire must offer connections but is not required to actually connect residents. The concessionaire is also not obliged to serve households on the fringes of this area *unless they meet certain criteria* in terms of population density and cost-viability, or outside the boundaries of this area. Thus, the risk of non-payment to the private operator is minimised and the financial viability of the project is more sound. However, the terms “population density” and “cost-viability” are not quantified and are thus subject to interpretation by the private operator. This ultimately means that the private operator is free to determine whether additional low-income areas are to be served or otherwise; and it is certainly possible that the poorest and lowest-density areas on the periphery of La Paz and El Alto will be excluded from formal water and sanitation services. This illustrates the need for clarity in the contract, to define explicitly which areas and residents are eligible to be served, and what specific criteria determine provision.

Source: Komives & Brook Cowen, 1998.

Given that the private sector may be reluctant to extend services to low-income and/or informal areas, there is therefore a need for incentives to make it profitable to serve the poor (Rivera, 1996). Klein (1998) suggests the following possible incentives for this:

- Cost-sharing arrangements
- Pricing arrangements
- Links to performance standards (bonuses)
- Insurance arrangements

Practical experience shows that several contracts contain incentives to the private sector to encourage provision to low-income areas. For example, in Gaza and Monagas State (Venezuela), bonuses rewarded private partners for provision to low-income areas (Marino *et al*, 1998; Saghir *et al*, 1998). In Buenos Aires, the city government awarded Águas Argentinas tax credits for digging trenches to install water and sanitation infrastructure, for which it usually charges a fee (Lyonnaise des Eaux, 1998). In Mexico City, the service contract entailed obligations to install a specific number of meters, with a fee being paid for each meter installed (Hazin, 1998).

Several experiences with PPP contracts have emphasised the need for great attention to be paid to the clarity of the contract and the way in which different institutional responsibilities are set out, as these are often ill-defined (Collignon *et al*, 1999). Such responsibilities will comprise the following (Collignon *et al*, 1999; McCoy-Thompson, 1998; Rivera, 1996):

- contracting built structures
- investment
- operation and maintenance
- monitoring and regulation
- commercial exploitation
- marketing and sales
- payment collection
- customer service

This is important for reducing the potential confusion and conflict, and reducing the likelihood of renegotiation of the terms of the contract (Klein, 1998). Attention to detail is also required, as contracts need to be tailor-made for the specific circumstances of the location (McCoy-Thompson, 1998).

While contracts should aim for clarity and comprehensiveness in order to reduce the likelihood of renegotiations, they still need to leave room for the concessionaire to devise efficient and innovative solutions to any unforeseen problems that may arise (Klein, 1998). Klein (1998) suggests that a way of doing this is to define clear and unambiguous performance targets without setting rules as how to achieve them. A number of practical experiences demonstrate that – especially with first-time contracts – room for manoeuvre has been allowed within the contract design in order to accommodate any unforeseen circumstances. For instance, in Mexico City, the contract was implemented gradually in order to allow room to correct errors and adjust to unforeseen circumstances, and in Sydney, the contract was purposefully designed to be flexible in order to allocate risks effectively and accommodate change that is not under the control of any one party (Alla & Manzi, 1996; Hazin, 1998). Box 7 shows how the roles and responsibilities of the public and private sectors were defined in the BOTT contracts in South Africa.

In order to ensure that contracts are adequately clear and explicit, sufficient time needs to be allocated to this beforehand, especially in the case of complex contracts, such as those for BOT-type projects (Rivera, 1996; Wilkes, 1999). Butcher (1999) notes that the full costs and responsibility for drawing up the contract lies solely with the contractor, not the government authority, which may lead to the private partner wishing to cut down the time and work involved in drawing up the contract in order to cut costs.

Box 7: conditions for service provision to low-income groups in the BOTT contract in South Africa

The four BOTT contracts between the Department for Water Affairs and Forestry (DWA) define the roles of all the stakeholders involved in the process. The contract defines the DWA as the "Employer" and the private contractor (the Project Implementation Agent) as the agent "Agent", with clear specification that the "employer" has overall responsibility for the contract.

- The Agent is responsible for identifying relevant community representatives and authorities for a local project steering committee, and for holding consultations with these stakeholders and making initial investigations on projects
- The Agent is required to prepare business plans for the area within its remit as well as for each individual project to be carried out as part of its contract
- The Agent must obtain acceptance for its business plan from the local project steering committee, before submitting it to DWA for approval, and for obtaining DWA's approval of the area business plan
- The Agent is obliged to incorporate institutional and social development within its business plans
- The contract specifies quality levels that the Agent is obliged to fulfil: e.g. basic water supply of 25 litres per person per day within 200 metres of the residence. The Agent is required to facilitate credit for higher levels of service if required by the community.
- The Agent is required to provide sanitation as an integral part of projects
- The Agent is responsible for the operation and maintenance of water and sanitation infrastructure for the duration of the contract
- The Agent is obliged to undertake training of community representatives and local authorities
- The contract entails the Agent transferring works to the operating authority on termination of the contract, and providing mentorship on transfer
- Timeframe: contract period = "life cycle of longest-lasting Business Plan"

Source: Ramaema, 1997

Authors discussing PPP arrangements often question how public health and issues of socio-economic well-being can be integrated into contracts. It is suggested that environmental and health externalities can be incorporated by way of agreements on drinking water quality. Performance bonds have been used in Mexico City, Manila and Buenos Aires, where the concession agreement included a schedule for the upgrade from direct discharge to primary treatment and then to secondary treatment and attaching obligations directly to commercial incentives, with fines if targets are not met (Johnstone & Wood, 1999a; Lyonnaise des Eaux, 1999). In Johnstone & Wood (1999a) note that such penalties need to be appropriate, that is, not so low that the company fails to change its behaviour and not so high as to discourage companies from bidding for the contract.

Although the government may stipulate in contracts to the private sector that certain areas with an insufficient level of service must be served as part of the PPP arrangements, there is the question of how to deal with such areas until an adequate service is provided. Johnstone & Wood (1999a) suggest the

possibility of stipulating in contracts areas to be served in order of priority. A different way of prioritising is to serve poor areas where unserved customers are willing to pay the full costs of installation, such as the peripheries of cities and areas where people rely on expensive vendors (Webb & Ehrhardt, 1998). Another suggestion is the provision of *interim* measures, such as temporary water pipes, provision of standpipes, water trucks, and pit latrine emptying, until communities can afford permanent provision (Johnstone & Wood, 1999a; Lyonnaise des Eaux, 1999?).

It is easy to envisage that changes in economic, social and technical conditions will occur over the course of a contract, especially one spanning 25 years or more, but which conditions will change and how in a specific circumstance are difficult to predict specifically. The problem with lack of definition of future changes that the government will wish to be addressed is that, if they are not written into contracts, the private provider will not be obliged to address them (Rees, 1998). Such problems arose in Limeira (Brazil) when new informal areas arose during the term of the contract and requested to be connected to standpipes; however, no provision for this event had been seen and therefore not included in the contract, and there was need for renegotiation between the public and private partners about how to extend services to these areas (Lyonnaise des Eaux, 1998). Ways of dealing with problems of this nature do not appear to have been addressed in the literature.

A similar, but more recognised problem applies to the problem of informal/illegal/squatter settlements. As noted in the previous section, such areas present particular problems in legal terms. Two ways of addressing such situations have been articulated in the literature: firstly, comprehensive attempts for governments and communities to regularise land tenure (Cairncross, 1992); and secondly the possibility of writing interim measures into contracts, for example, provision of temporary water pipes, standpipes, water trucks and pit-latrines emptying, until the land tenure situation is addressed (Johnstone & Wood, 1999a; Lyonnaise des Eaux, 1998).

The government may also wish to use the contract as a vehicle for controlling the level of profit generated by the private operator. Concerns about PPP agreements are often centred on the levels of profits made by the private sector at the expense of the poor. The danger to the public sector of not controlling the levels of profit to the private sector is that the private sector may cut corners in order to maximise profits. Collignon *et al* (1999) note that the main strategy of private water companies is to establish a monopoly and secure this through the contract. This structure helps to ensure that the private operator can more or less guarantee a certain level of profit, as there is no competition from other providers. However, the problem is reconciling this structure with users' needs, as low-income customers may wish to use alternative sources and the informal sector on which poor people may rely is liable to be clamped down (Collignon *et al*, 1999).

3.2.2 Institutional issues

At the bidding phase, institutional roles and responsibilities, as discussed and defined during the previous phase, need to be finalised and explicitly articulated in the contract. Both parties need to ensure that the contract protects them against adverse events – for the public sector, poor performance by the private sector which may affect the quality of services to the population, and commercial risk (especially in the case of a change of government) for the private sector (Wilkes, 1999).

The question of how to ensure that the public sector retains a certain degree of bargaining power when negotiating the terms of the contract does not appear to be addressed in the literature. It is conceivable that the public sector may have a lower level of bargaining power, depending on the circumstances underlying its decision to involve the private sector. While the private partner may be in a position to negotiate favourable conditions based on elements of risk, the over-protection of private operators in the form of excessively beneficial monopoly rights should be discouraged, as such arrangements are un conducive to entrepreneurship and may have negative implications for the level of service delivered to users (Collignon *et al*, 1999; Uribe & Willig, 1999). The role of politics in influencing negotiation and way to mitigate such influences remains a knowledge gap. The impact of corruption during the PPP implementation is also unexplored.

3.2.3 Management issues

In order to improve and/or extend services to the poor under PSP agreements, management issues that should be considered at the bidding stage and specified in the contract would be expected to cover innovative ideas about how provision of services to the poor can be promoted. This may include, for instance, decisions regarding how customers can be segregated according to socio-economic status, and how responsibility for capital investment, operation and maintenance can be allocated.

The literature does not appear to cover to any significant extent management issues at the bidding stage; rather, it seems that such issues are very much decided during the operation stage, once the private contractor has put the contract into action. The management decisions that are documented at this stage appear to be the more fundamental and/or larger-scale decisions that need agreement before the negotiation proceeds. An example is Santiago de Chile, where the state agency, EMOS, became a shareholder and distributed concessions, of which it won four (Rivera, 1996).

McCoy-Thompson (1998) notes the growing popularity of performance-based contracts, where the private partner is given greater management and freedom, on the assumption that this greater scope will allow it to maximise its performance and thus profits. Uribe & Willig (1999) assert that, in addition to management structure, the legal foundations of PPP agreements are also a significant factor that affect private partners' performance levels.

3.2.4 Legal issues

The role of government social policy and legal issues is an issue that seems to be neglected in the literature, especially at the bidding stage, where it could be assumed that it is of paramount importance. Both governmental social policy and the ways in which the law can protect the rights of users under PSP agreements are crucial if the needs of the poor are to be considered and met. Some countries appear to have clear government policy that takes the needs of the poor into account in water and sanitation services; such as Chile, where social policy explicitly aims to facilitate access of the poor to water and sanitation services in poor settlements, and this is combined with pro-poor including a comprehensive tariff system and subsidies for low-income consumers (Rivera, 1996).

Although a strong social policy may be in place, it is also pertinent to consider whether a country's existing legislation is adequate to cover agreements with the private sector, or whether new legislation should be devised. For instance, in the UK, new legislation was drafted and brought in when the regional water authorities were privatised, and included the definition of a legal process to be followed in the event that a private operator wished to disconnect a customer from the supply in the case of non-payment (Drakeford, 1998). Collignon *et al* (1999) note that, even if a new legal framework is devised to cover PPP agreements, it usually only addresses the public sector, the private sector, and users; and other significant actors in the water and sanitation sector, such as repairers and lorry drivers, are rarely taken into account.

3.2.5 Risk & Liability

At the pre-contractual stage, the potential risks to all parties under PPP arrangements were identified, and at the bidding stage, thought needs to be given to measures that are appropriate for the mitigation of these risks, and how these can be written into the contract. Contractual specification of mitigation and insurance measures against risk may be important for the private sector, as the private sector will use all available mechanisms to reduce its levels of risk. One reason why the private sector was not interested in bidding for the Caracas tender was that the contract failed to guarantee profits in relation to risks (Rivera, 1996).

Haarmeyer & Mody (1998) propose the following risk-pooling instruments, that structure the PPP arrangement in such a way that it minimises the risk to the project:

- corporate / balance-sheet financing instead of project financing
- equity funds
- bundling of small projects to form a commercially viable "entity", rather than operating single small-scale projects in isolation
- multi-utility packages, where the private operator takes on more than one utility, so that profits from one (e.g. telecommunications) can be used to offset losses against another (e.g. sanitation).

In Jakarta, an attempt was made to identify possible risks at an early stage and write them into the contract along with mitigation or insurance measures. Some of the mitigation measures explicitly specified in the contract include the following (McGivern, 1999):

- Loss of costs, investment and anticipated profit from cancellation of project
- Polluter to bear penalty of contamination of water resources
- Potential rise in labour, chemical, exchange costs considered within tariff structure
- Survey of current condition of assets undertaken (so no redress at end of contract)
- Risk insurance against terrorism, war etc.
- Escrow account set up for payment risk

The different levels of risk and their mitigation measures will depend on the type of contract offered to the private sector. For instance, in Monagas State (Venezuela), risks were built into the management contract in

the form of incentives in order to minimise risk. In this case, this was predominantly because the contract was expected to be renewed in the form of a different type of contract (concession) with greater risk to the private sector; hence the effort to reduce risk in the initial contract. In this way, the private operator was able to find out about the operation of the water utility without having to commit risk from the outset (Marino *et al*, 1998).

It appears that there are certain risks are important determinants in the private sector's decision to become involved in the PPP bid which are not appropriate to write into contracts. Among these is a lack of political support from the government authorities. For instance, in the case of Caracas, a lack of political support from the Venezuelan government was one of the main reasons why international firms refused to bid for the contract; and in Lima, the private sector was put off bidding because the government postponed the bid of the contract, which instilled a lack of confidence on the part of the private sector (Rivera, 1996).

While there is a wealth of literature discussing the risks under PPP contracts, as this is one of the key issues related to this type of arrangement, in almost all cases, risk is discussed from the perspective of the public and private sectors alone. There is very little mention of the risks to poor users under PPP agreements, and this may be a significant oversight. The discussion of risk in the operational phase will examine the risks to the poor under PPP agreements.

3.2.6 Financial issues/Tariffs

At the stage at which the contract is drawn up, the public and private partners will usually negotiate levels of finance and tariffs that are acceptable to both parties and also to users. Establishing levels that are acceptable to all parties may be a delicate balance to strike, as the public sector and the private sector are likely to have different opinions as to what levels are acceptable. Realistic tariffs and incentives need to be set, otherwise the private sector will be discouraged from bidding for the contract (Rivera, 1996). Ranasinghe (1998) identifies three major areas where differences of opinion may be concentrated:

- profits vs. restriction on tariff increases
- minimisation of costs vs. maintenance of infrastructure and job security
- environmental protection

Governments are often reluctant to raise tariff levels for fear of losing political support; however, PPP arrangements will seldom be financially viable if tariffs are not raised to realistic levels (Ranasinghe, 1998). Although service tariffs under private sector management are designed to reflect the real cost of producing water, a PPP agreement that maximises benefit to the poor, should not raise tariffs to the extent that the service becomes too expensive for poor consumers. If this happens, the poor will not be better off under the PPP agreement and may have to resort to other sources of water and sanitation which may have negative health implications (Johnstone & Wood, 1999a). In order to address this, an affordable service needs to be ensured for low-income people (Johnstone & Wood, 1999a). On the other side of the coin, if the government insists on tariffs that are too low, this will restrict the private sector's potential for expansion, which is most likely to negatively affect low-income people in areas that are not served (Spiller & Savedoff, 1999). However, tariffs are seldom linked to productivity or investment needs (Rivera, 1996). Spiller & Savedoff (1999) propose rents and/or incentives to the private sector that do not imply higher costs for customers, in order to maintain levels of investment at those needed to maintain and expand the network, whilst not making the service unaffordable to low-income groups. Klein (1998) notes that prior agreement between the public and private sectors must be made in order to determine pricing in accordance with service quality, otherwise the contractor may reap excessive profits by lowering the quality of the service. However, the problem with specifying pricing and quality at the initiation of a contract is that markets may change over the course of the contract (Klein, 1998). This can be allowed for if mechanisms for revision of tariffs and/or levels of service are also contained within the contract. For instance, in the Jakarta concession, tariffs were pre-structured to allow for potential rises in labour, chemical, and exchange costs (McGivern, 1999).

With regard to finance for other aspects, such as infrastructure, the private sector may wish to minimise its risk by agreeing that the state retains ownership and responsibility for finance and investment. However, although the state may take responsibility for this, this does not necessarily mean that it has a strong capacity for dedicating finance to the project (Rivera, 1996). While the public sector may be interested in making the private operator responsible for the maintenance of infrastructure, there is the risk that the private sector will keep costs to a minimum. For instance, Tandy (1997) notes that at the end of a BOT-type contract, the fact that the assets will be transferred back to the public sector or to an alternative private sector bidder may deter private companies from investing in the improvement of the infrastructure (Tandy, 1997). Financial backing is therefore a factor that governments may consider when selecting a private partner. For instance in Sydney, the successful bidder was selected partly due to the strengths of its assets and its credit rating and ability to secure loans from lending banks (Alla & Manzi, 1996). The best bidder

may also not be the lowest bidder, and this may be an important consideration in judging the quality of services that different bidders propose to extend to low-income people. In Cincinnati (USA), the contract was awarded to the agency deemed most competent, rather than the one that offered the lowest bid (Shanker & Rodman, 1996).

Subsidies are often proposed as measures to ensure an affordable service to low-income people, with differential charges according to consumers' ability to pay (Nath, 1994). However their effectiveness will very much depend on the way that they are structured. Low prices due to government subsidisation are often equated with low quality and efficiency, which may mean that the poor, above all, receive a poor, or no, service (Spiller & Savedoff, 1999). Another frequently noted problem with price subsidies is that the poor rarely benefit as they lack access to the services that are subsidised (Brook Cowen, 1997a; Irwin, 1997; Lewis & Miller, 1987). Irwin (1997) argues that differential prices for different customers cannot survive competition, and proposes three alternative options to ensure affordable prices to poor consumers (Irwin, 1997):

- preserve the pre-privatisation pricing structure within one company, which will continue to offer low prices, for which the cost will be distributed amongst all the competitors. For instance, the Australian telecommunications agency Telstra is obliged to provide lines and payphones in remote areas, where provision is essential but loss-making, and is funded by revenue from its two main competitors
- fund price subsidies from general taxation rather than transfers between companies. For example, in Chile, tariff reforms and subsidies from tax help poorer households afford new higher levels of service.
- rely on social welfare payments rather than price subsidies in utilities. In New Zealand, the government uses increased levels of welfare assistance to channel support to low-income people rather than reducing their utility bills.

The risk of loss of revenue from providing water and sanitation services to low-income settlements can act as discouragement to private sector (Rivera, 1996). It is therefore beneficial for governments wishing to engage in private-sector participation to extend water and sanitation services to low-income settlements to define the financial arrangements to apply to such contracts at the bidding stage, in order not to discourage the private sector from bidding for the contract. The need for alternative financial arrangements for low-income areas stems from the fact that the private sector fears that it will be unable to recoup the costs of provision through lack of service payment. Whether or not this view is founded, alternative arrangements are being implemented in low-income areas to mitigate this risk, which are described in the following phase.

3.2.7 Technology/Infrastructure

It will be important to define standards of provision expected from the private operator when defining the terms of the contract, as if the private operator is not contractually obliged to provide a certain level of service, that provided to low-income areas may be inadequate. While political leaders may encourage the provision of water and sanitation to low-income areas, the predefinition of certain standards for infrastructure and services often present too great a risk to the private partner, and fail to meet the affordability of the residents themselves:

The extension of the mains to marginal urban areas does indeed require considerable investment and implies supplying disadvantaged population groups whose ability to pay presents significant collection problems (Lyonnaise des Eaux, 1999:27).

This problem is exacerbated by the fact that many low-income areas are also unplanned and sited on marginal sites such as flood-prone land and steep hillsides and thus are physically unsuitable for conventional water and sanitation conventional solutions.

Lyonnaise des Eaux (1999) recommends that governments do not set household connections as the absolute goal, but consider alternatives such as standpipes, autonomous water kiosks, communal wells and informal vendors, according to the demands and willingness and ability to pay of the beneficiaries. For instance, the La Paz-El Alto contract specifies in-house connections only and requires the elimination of communal standpipes. The consequences of these stipulations are that the options available to low-income residents are restricted. The poor only have the option of one level of service, and are not able to choose a lower level of service if they cannot afford individual connections (Komives & Brook Cowen, 1998). A further clause in the contract also prohibits the resale of water from private connections, as part of the monopoly rights to the private provider. This may also restrict access of the poor to a cheap and safe water supply, as a study of the legalisation of resale of water from household connections in Jakarta showed that people without household connections gained access to an alternative supply at lower prices (Crane, 1994; Komives & Brook Cowen, 1998).

Lyonnaise des Eaux (1998) distinguishes between low-income settlements with inadequate water and sanitation solutions, and informal, illegal or temporary settlements. Suggested possible alternative solutions for low-income areas include the installation of conventional facilities with adapted mechanisms for pricing, payment, finance and management to suit low-income groups (Lyonnaise des Eaux, 1999?). Openness to the adoption of such alternative arrangements may be important in the pre-contractual stage in order to engage the interest and confidence of the private sector.

Lyonnaise des Eaux (1998) suggests the following alternatives:

- Standpipes
- Autonomous water kiosks
- Public wells
- Informal vendors

Standpipes, autonomous water kiosks, and public wells are a common way of ensuring a basic supply to unserved communities, although the water tends to be more expensive (between three and ten times) than household connections; so household connections may be more attractive in terms of convenience and price in the long term. Informal vendors are often considered as a lifeline to the poor without any alternative supplies, but again, prices tend to be much higher than the mains, and water quality cannot be assured. A possible consideration for the integration of informal vendors into PSP programmes may involve their regulation in terms of price and quality, although this may hamper their profitability.

In informal and illegal settlements, other solutions often have to be considered due to technical feasibility, cost effectiveness and willingness to pay on the part of users. Lyonnaise des Eaux (1998) believes that the role of the private sector here is to support informal solutions. For instance, the cost of installing meters in areas with very low consumption rates may be unfeasible, and a possible solution would be the installation of a single meter for which the community would divide the cost amongst the number of households (Lyonnaise des Eaux, 1998).

- Communal wells
- Tubewells/boreholes
- Water vendors
- Public tanker trucks
- Water kiosks
- Communal standpipes
- Yard/roof tanks
- Awareness-raising and information provision

Lyonnaise des Eaux also suggests the use of order of priority within contracts, in order to prioritise services in the order of most pressing need, as follows (Lyonnaise des Eaux, 1998):

- collection of stormwater and domestic wastewater and individual sanitation solutions
- wastewater collection networks
- wastewater treatment plant

Johnstone & Wood (1999a) note that the lack of alternative technological solutions in the past has partly been due to insufficient technical expertise on the part of the public sector, and question whether the private sector has additional expertise in this field. They suggest that this area could open up a possible role for NGOs and local consultants. It may be the case the private sector has greater scope to employ technical consultants to develop this area, and a preliminary study by Lyonnaise des Eaux (1999?) on alternative techniques for water supply and sanitation to low-income areas indicates that the private sector is interested in developing alternative solutions. The potential role of NGOs in projects involving PSP has been demonstrated in Buenos Aires, where a local NGO, IIED-América Latina, has worked with communities and Águas Argentinas to try to devise alternative sanitation systems which are more consistent with households ability and willingness to pay (Johnstone & Wood, 1999a).

3.2.8 Sanitation

As discussed at the pre-contractual stage, due to the negative environmental and health benefits of a lack of wastewater disposal and sanitation, there is a need to address sanitation in conjunction with water supply. It is therefore likely that governments will require that sanitation be made an integral part of the contract during the negotiation process.

However, as previously noted, sanitation is a difficult issue to integrate into a commercial agreement, and therefore there may be the need for incentives to encourage private operators to promote sanitation

alongside water supply. The types of incentives that are suitable or available does not appear to be discussed in the literature.

One major problem with sanitation is the cost of the connection charge, which is typically higher than that for water. Households are expected to pay the full connection charge, which are often too high for lower-income households. For instance, charges in Buenos Aires were put at US\$1,000, but negotiation was made in order for these costs to be recouped from the payment of service charges by all users, and not just those that were connected to the sanitation network (Johnstone & Wood, 1999a). Lyonnaise des Eaux (1998) proposes that sanitation solutions be designed with regard to affordability and ease of maintenance. However, it also acknowledges that such facilities should be designed in terms of their social benefits, that may encourage poor people to want to invest in such facilities. Such factors include a potential to reduce odour, control of flies and other insects and vermin, as well as being attractive and more convenient than existing facilities.

3.2.9 Participation/users' perspective

The body of literature discussing PSP arrangements generally lacks a consolidated attempt to discuss issues from users' perspectives at any stage prior to the operation phase. The consideration of users' perspectives may be important at this stage in order to gauge the levels of service that low-income groups desire and are willing to pay for. Collignon *et al* (1999) note that users perspectives' regarding preferred sources of water are rarely taken into account in PPP projects. Modern systems sometimes interfere with traditional practices such as the use of a community spring, and such alternative sources need to be documented prior to the operation phase.

There does not appear to be a consensus on whether representatives of users, including the poor, should have a voice in the organisation of the services under a PPP agreement at the time when the contract is being negotiated. Nor is there any mention of how the poor could have access to such procedures. The perceptions of users regarding the water supply and issues surrounding privatisation are mainly concentrated on gaining popular support for service provision under PSP and awareness raising. In Mexico City, public perceptions of water supply meant that people saw water as a cheap and unlimited resources and people were opposed both to increased tariffs and metering. Under PSP, a need was seen for awareness-raising in order to reduce wastage and inform people that price increases reflect the true cost of water and increased consumption (Hazin, 1998).

3.2.10 Information

The literature presents a distinct lack of issues relating to how information collected before the bidding process can be used and incorporated into the negotiations preceding the drawing up of the contract. Willingness to pay studies are frequently mentioned, but there is no indication of whether such studies are actually carried out, and whether their results have any significant bearing on the terms of the contract. Although it is not clear from the literature, it may be the case that the studies carried out are only those that are *essential* to the ability of the private sector to put the contract into practice. For example, in Mexico City, prior to the implementation of the contract, a survey was undertaken to update customer records which were both incomplete and outdated. Needless to say, this information was crucial to the private sector's ability to bill customers for consumption once private operation of the water supply had begun (Hazin, 1998).

3.2.11 Regulation

At this stage of the PPP process, the limits to the responsibilities of the regulator can be defined. Johnstone & Wood (1999a) believe that contracts should place as little burden as possible on regulatory authorities, and that their role is primarily to ensure that the private agencies meet their contractual obligations. If regulators are then merely responsible for issues such as leakage targets and ensuring that a sufficient number of new connections have been made in line with the contract, this leaves open the question of who will be responsible for dealing with the complex social and environmental standards within the PPP agreement, which will have the greatest impact on the standard and level of provision to the poor.

This problem is illustrated by the structure of the regulatory body in the UK (The Office of Water Services - OFWAT), which is responsible for monitoring and regulating the following aspects of the private operators' service:

- Control monopoly tendencies
- Ensure that investment is made
- Protect consumer interests
- Oversee environmental regulation (undertaken by other agencies)

- Ensure that companies earn adequate returns / price profitable to them
- Regulate prices – set maximum price rises for each company according to detailed cost analysis (“price cap mechanism”)
- Delivery of services meeting minimum standards (EEC)
- Ensure that the price is acceptable to consumers

The philosophy behind this model is that, as the water operators are responsible for the full cycle of the water and wastewater process, then the regulator also needs to monitor all aspects of the process in order to ensure improvements in water and environmental quality throughout the cycle. However, as Neto (1998) notes, this may lead to a conflict of responsibilities, as the regulator must ensure that the price is acceptable to both private operator and consumers, which is a difficult balance to strike (Neto, 1998).

3.2.12 Water resources/Environmental management

As discussed at the pre-contractual stage, the conservation and allocation of water resources needs to be promoted to the private sector, and the PPP agreement needs to make it in the interest of the private operator to do so (Johnstone & Wood, 1999a). This issue is critical where there is special need for conservation and protection of resources, such as in cases of water shortages or immediate danger of contamination. In Mexico City, water shortages are further threatened due to high consumption levels resulting from a growing population, however these circumstances are not specifically addressed within the tenders for the PSP project (Hazin, 1998).

The following ways of incorporating private sector responsibility for natural resource and environmental objectives are documented in the literature:

- Make private operators responsible for all operational aspects of the water cycle from collection to wastewater treatment, and include responsibility for environmental regulation (for instance, protection of aquatic eco-system, flood protection and land drainage). In the UK, the privatised regional water authorities were made responsible for integrated water resources management in order that such responsibilities formed part of the contract and thus the private sector had a vested interest in complying with them (Neto, 1998).
- The use of groundwater is especially problematic because it is subject to contamination, and the contamination of upper groundwater can also cause users to drill deeper and cause depletion. It is also difficult to estimate the amount of the resource and to monitor usage, and exclude users (Johnstone & Wood, 1999a). A way of attempting to control the consumption and quality of groundwater is to issue licences and charge fees for private groundwater extraction within the boundaries of the private operator’s service area (Komives & Brook Cowen, 1998).
- Another option is to bring in a pollution control tax, which will levy a financial penalty on operators that fail to meet natural resource conservation and protection standards. This approach is used in France, where it may be limited because fines are not made in accordance with the severity of pollution, and certain polluters, such as farmers, are exempted from the rule (Neto, 1998).

3.3 Operation phase

3.3.1 Contractual issues

There are two major related contractual issues to be dealt with during the operation phase. The first is related to circumstances under which the private operator is failing to adhere to the conditions set out in the contract and how this can be addressed; and the second is related to circumstances that have changed since the original contract was drawn up, and how renegotiation can be organised.

There are several cases of private operators having failed to meet the targets set out in the contract, for various reasons. For example, in Mexico City, targets were not met due to the extremely deficient level of service inherited from the public operator in some areas, and further goals were not met due to economic and political difficulties at the time (Hazin, 1998). While certain unforeseen circumstances may arise and may be outside the control of the involved parties, the situation still needs to be addressed, and reflection is needed on how the public sector can take steps to deal with the situation. This is an issue that does not appear to be thought about or discussed or discussed in the literature. For instance, in Cancún (Mexico), the contract specified certain investments that the private operator was unable to make due to financial crisis (Rivera, 1996). Rivera (1996) notes how this event led to the erosion of public support for PSP, as the government was blamed; but the power of the public sector to address the situation is not further explored. Whether the public sector would have the means to prosecute the private operator for failing to meet the terms of the contract is open to question. The case of Palm Bay, Florida (USA), described in box 9, illustrates how the public sector has little redress in such circumstances.

As noted in the previous phases, at the outset of a contract, especially long-term agreements lasting 25 years or more, it is very difficult to predict how conditions will change, in order that these can be considered within the contractual agreement. The need for contracts to be renegotiated during their course is recognised in the literature, and certain cases where this has occurred are cited. However, the issue of how contracts can be renegotiated during their operation phase is not given attention, and it is not clear how much bargaining power the public partner has once the private sector is operational.

Another potential legal pitfall that needs to be addressed at this stage is whether the conditions of the PPP contract will continue to apply if the private provider sub-contracts work out to other companies. If the public sector does not ensure that the contract enforces the same conditions, it may find that it has no form of redress if the standards and target set out in the original contract are not legally binding for sub-contracted work. For instance, in Sub-Saharan Africa, standpipe distribution was delegated to private companies for production, transport, and distribution, and the final distribution stage was often sub-contracted, but the norms originally covering this were not covered by the contract, and quality assurance could not be guaranteed (Collignon *et al*, 1999).

Box 9: Failure of a PPP in Palm Bay, Florida, USA

The case of Palm Bay illustrates the vulnerability of the local public authority within a 30-year PPP arrangement that ended in failure. The private sector partner, the General Development Corporation (GDC), was a reputable developer that controlled infrastructure and service delivery, which may have led to the weakening of public authority. When it was unable to fulfil its commitment, it exploited its capacity to exit by declaring bankruptcy leaving the government to take control of infrastructure and services. It also minimised citizen participation, leaving both the city government and the citizens to question who then governed the partnership that failed to deliver infrastructure. The Palm Bay City Government was forced to take responsibility for the legacy of the crisis, and had to accept 800 acres of land and responsibility for collapsed projects, which by then had become an infrastructure crisis. Above all, the case illustrates the possible consequences of a PPP arrangement in which the private sector takes control of infrastructure and services with minimal participation of both local government and local citizens.

Source: Rosell (1994)

3.3.2 Institutional issues

PPPs run the risk of suffering from poor institutional relationships during the course of the agreement. For instance, in Guinea, the partnership between the state-owned water agency and the private company suffered from tensions and conflicts, which negatively affected the performance of the contract (Brook Cowen, 1999). Similarly, in Mexico City, the different public institutions involved in water supply led to duplication and overlap and lack of co-ordination (Hazin, 1998). It is therefore crucial to establish and maintain good co-ordination between public and private partners during the PPP agreement (Johnstone & Wood, 1999a). Bennett (1998) believes that the sustainability of PPPs depends on the degree of commitment on the part of the partners and the willingness of all stakeholders to play mutually agreed roles in the allocated activities (Bennett, 1998).

Another common problem arising during the course of PPPs is political problems, which have been documented in Mexico City and Gaza, for instance (Hazin, 1998; Saghir *et al*, 1998). In Gaza, the lack of support from the local authority partner led to the establishment of independent technical and financial auditors (Saghir *et al*, 1998). Strategies to minimise and overcome institutional problems of this nature are little considered within the literature, although the following practical experiences are documented. In Santa Cruz (Bolivia), one benefit of the co-operative model leads to the avoidance of political interference (Nickson, 1998). Easter & Hearne (1995) note that in some cases, community-based Water User Associations (WUAs) have taken over activities traditionally performed by government agencies.

An institutional issue that is repeatedly mentioned in the literature is the difficulty of the public sector in adjusting to a new and different role under the PPP (Batley, 1997). The extent to which the role of public sector employees will change will depend on the type of contract entered into. For instance, under a service contract, civil servants' roles may not change significantly from when the public authorities were directly engaged in provision. (Johnstone & Wood, 1999a). However, when civil servants' roles do change, they may feel that they have lost power when their former responsibilities are handed over to the private sector, resulting in a loss of morale (Collignon *et al*, 1999). For instance, Bwengye (1999) notes that in Uganda, civil servants moved to a supervisory role, and it was anticipated that low-paid civil servants would have great difficulty supervising well-paid contractors. Cairncross (1992) also notes that government officials may find it

difficult to engage in different activities, such as marketing activities in order to stimulate demand for water and sanitation.

The role of civil society within PSP agreements has been relatively little explored. Collignon *et al* (1999) note that NGO initiatives present great differences in terms of:

- The design and/or quality of infrastructure
- mobilisation of investment funds
- management and operation

NGOs may also have a role to play in mediating between the interests of both the public and private sector, as well as being a vehicle through which the voice of the poor can be expressed, which is commonly regarded to be one of the main strengths of NGOs in development projects. However, Bennett (1998) advocates the direct involvement of poor citizens to participate in decision making and management.

3.3.3 Management issues

Lewis & Miller (1987) note that little attention is given to the organization, management and finance of water supply and sanitation to the poor, as the focus has been on establishing access to these services. Lyonnaise des Eaux (1999?) identifies several management problems with providing water and sanitation services to low-income groups. Firstly, management costs in low-income areas may be judged too high to make provision feasible, due to the difficulty of maintaining user files in low-income settlements, a large proportion of unpaid bills, unbilled or illegal consumption, low user consumption (and hence low bills) and high levels of network maintenance. Devas (1996) proposes the following management possibilities for expanding service to poor settlements:

- expand the provincial water enterprise
- invest in wells/handpumps in conjunction with NGOs
- allow expanded role of the informal private sector

3.3.4 Legal issues

The discussion of legal issues relating to the poor is virtually absent in the PSP literature. For example, there does not seem to be any indication of the type of organisation that can support poor users' access to legal mechanisms within PPP arrangements. Much PSP literature mentions the possible roles of NGOs, but not specifically in respect of legal issues. The other type of organisation that is often mentioned with respect to water and sanitation issues are user associations; however, Collignon *et al* (1999) note that these are often not very keen to establish formal legal status. With regard to developing countries, the little discussion present in the literature focuses on the legal underpinnings of the PSP arrangements in general, and without reference to the poor. The thinking does not seem to have advanced to the stage of how the poor can exploit legislation set up to protect them under such arrangements. However, one interesting case in the UK illustrates how legislation was set up to protect consumers, but how private operators have manipulated the legislation to circumvent its obligations to the poor (cf. box 10).

The question of how to guarantee that the private sector will yield the desired performance improvements remains an open question in the literature, although reference is often made to contractual conditions (Rees, 1998). The provision in practice of the conditions to benefit the poor set out in the contract is an important issue, since there is little point of contractually obliging the private partner to making provision to the poor if this does not happen in practice and for which there is little redress.

Box 10: Private companies' response to non-payment of water in England and Wales

In England and Wales, private water providers are prevented from disconnecting customers who are in arrears with their water bills. Legislation states that the case must go to court, and the local authorities must be notified of an impending disconnection.

In Wales, private providers have come up with a method that bypasses the legal process for the increasing number of low-income residents who are unable to keep up with their water payments. The private water provider for Wales installed pre-payment water meters in the homes of customers who were behind with their water payments. The meters are operated by tokens, and if customers do not feed tokens into the meter, their water supply is cut off. Therefore, in this situation, the responsibility for disconnection can be seen to lie with the *user*, thus releasing the private company from its legal obligation of prosecution and notification of the local authorities when disconnection is required.

Unlike gas or electricity meters, water pre-payment tokens are valid for set number of days rather than a certain amount of consumption, which means that people are unable to eke out their supply in order to save

money. A proportion of the payment for the token also goes towards clearing the accumulated debt and is not valid for water supply. The study undertaken in Wales found that people with pre-payment meters go without water when they cannot pay for tokens, which leads to them store water in containers and the bath (with clear public health risks) and acquiring water from a neighbours' supplies.

Certain local authorities in the areas where pre-payment meters were being enforced saw that users were being disconnected in a way that was not consistent with the intention of the original legislation to cover this issue. Several local authorities launched a legal challenge that was overruled by the regulator, OFWAT. However, following a judicial review, water companies were ordered to withdraw pre-payment meters if so requested by customers. The judge acknowledged that some people may find it easier to budget with the use of a meter, and in such cases pre-payment meters could be used; but a ruling against their use for disconnection purposes was made. OFWAT again defended private companies' need for a disconnection device, in order that consumers were not given the message that they do not have to pay for their water consumption.

Following this ruling, private water companies in England and Wales are instead considering reduced-flow devices which restrict the flow to a dribble for indebted customers, in order to penalise non-paying get round the disconnection issue.

Source: Drakeford (1998)

3.3.5 Risk & Liability

As noted at the bidding stage, the issue of risk in the literature is predominantly discussed from the perspective of the private operator and the public sector. The potential risks to the poor under PSP contracts, such as higher and/or unaffordable charges, disconnection in the event of non-payment and possibly high reconnection fees, and lack of access to alternative sources (including community sources and informal sector provision), constitute an issue that needs to be further explored within the context of PPP and the poor. The few instances in which a connection is made between risk and poverty are when a risk to a contractor affects its ability to serve the poor. For example, in Aguascalientes (Mexico), the national currency crisis in the 1990s (devaluation and inflation) affected the financial capacity of PSP, which in turn negatively impacted upon the level of service extended to the poor (Rivera, 1996).

3.3.6 Financial issues/Tariffs

Tariffs under private sector operation are designed to reflect the true cost of water production plus a profit margin for the operator. As water supplies under public management in many countries were highly subsidised, with low coverage and poor maintenance, it is common to observe that tariffs have risen dramatically under PSP (Rivera, 1996).

It is often difficult for users to be able to adapt to non-subsidised prices that reflect the full cost of the service. However, if tariffs for service provision are set too high, they may become unaffordable for low-income groups, consequently reducing their access to improved water and sanitation services. It is therefore necessary to consider how tariff rates can be structured in order that they benefit lower-income groups. Rivera (1996) believes that PSP has made great progress in the design and implementation of more efficient and equitable tariffs. The following tariff structures have been proposed:

Table 4: Tariff Structures to benefit the Poor

Cross-subsidy	Revenue from collection in rich areas subsidises lower prices for poor areas
Social tariff / Welfare tariffs	Lower service charges for low-income households, may be in the form of a standard monthly charge instead of a metered charge
Combined tariff for water and sanitation	Flat-rate charge for both water and sewerage services
Rising block tariffs	Lower rate per m ³ for first xm ³ used
Banded charges by area	Monthly charge banded according to socio-economic status of area of residence, i.e. higher rates for richer areas and lower rates for poorer areas
Lifeline tariffs	No charge for a certain initial level of consumption

Sources: Collignon *et al*, 1999; Drakeford, 1998; Johnstone & Wood, 1999a; Komives & Brook Cowen, 1998; Lyonnaise des Eaux, 1998; Rivera, 1996

- Cross subsidies: Several authors believe that subsidised tariffs do not withstand competition. In practice, however, subsidies are effective, as they ensure that the poor pay less for services. For example, in Queenstown (South Africa), water is subsidised and sold at a loss in (black) townships and at a profit in (white) cities (Tandy, 1997). However, in Cancún (Mexico), water is subsidised for poor users in accordance with government policy, but this has aroused opposition from industry and hotels (Rivera, 1996).
- Social tariff / Welfare tariffs: These tariffs are also beneficial to low-income households, but are not attractive to the private sector because low-consumption households on social tariffs – particularly if they make up a significant proportion of the city's population – are severely loss-making for the private operator.
- Combined tariff for water and sanitation: This is an effective way to charge poor households for sanitation services, however those households without sanitation connections must be charged less than those with both water and sanitation connections; otherwise there will be no incentive for the private operator to install sewerage connections to those paying the same. This tariff structure is used in the La-Paz-El Alto concession.
- Rising block tariffs: these tariffs are predominantly advantageous to low-consumption households, and if these are numerous, this structure may be unattractive to the private operator, which will be operating at a loss. This structure is used in Manila and Limeira (Brazil).
- Lifeline tariffs: These tariffs are similar to rising block tariffs, except that the first predetermined number of units are free of charge. This form of charge is likely to be much more unattractive to the private operator, not only because a certain amount of water is distributed free of charge, but also because this helps to reduce the market value of water. This tariff structure is operated in Buenos Aires – notably a rich city where income from high-consumption rich households can be guaranteed to subsidise the free water.
- Banded charges by area: These tariffs favour informal/illegal settlements and peri-urban areas, but again may be unattractive to private operators if the city is predominantly made up of low-income settlements. For example, in Cartagena (Colombia), the residential areas are split into six socio-economic levels, and the problem is that most people fall into the lower-income zone and therefore artificially high charges for the rich are needed to compensate (Rivera, 1996).

As can be seen from the above, most of these pricing arrangements for low-income groups are unattractive to private operators. Thus there is a danger that such subsidies will discourage private providers to expand into poorer neighbourhoods and instead will prefer to concentrate in richer areas where there are higher profits (Johnstone & Wood, 1999a). However, while it can be argued that all users should pay the full cost of water, it can also be argued that uniform service charges represent a higher *proportion* of poor people's income than tariffs reflecting socio-economic status (Johnstone & Wood, 1999a).

Non-payment by poor users is perhaps the greatest disincentive to the private sector for provision of services to low-income areas. For example, in Guinea, high rates of non-payment persisted under private sector provision (Rivera, 1996). Lyonnaise des Eaux (1998) describes the following methods that have improved payment collection rates in low-income areas of Buenos Aires:

- small communities: block billing - contract with local residents' association instead of individuals and settlement billed as a whole – has been very successful
- bigger communities – block billing by block or street etc.
- larger areas - distribution of bills by local resident who is paid for distributing bills and collecting and delivering payment as a % of the amount collected – has improved payment rates
- individual initiative e.g. one person goes to the city to pay bills and others pay him/her to take their bills too.

The issue of user disconnection is much discussed in the PSP literature, but little consensus appears to have been reached. Johnstone & Wood (1999a) debate the ethics of the private operator being allowed to disconnect in the case of non-payment, however, the case of the UK described in box 10 shows how the private providers have instigated self-disconnection on customers. Illegal connections are another major problem for private operators, however, there is a need to investigate alternatives rather than simply disconnect, which will simply force the user to find another source (Johnstone & Wood, 1999a; McCoy-Thompson, 1998)

The issue of disconnection has led to the development of alternative solutions predominantly based on pre-payment methods. One of the most notable amongst these has been the standpipes operated by "smart cards" in South Africa. To use this system, users purchase cards from shops and insert them into the standpipe, and the meter deducts the number of units equivalent to the water used from the card (Lyonnaise des Eaux, 1998). Individual pre-payment meters are also being widely used, and are even suggested to be

beneficial to consumers as they encourage water economy in order to save money. However, this may also be a disincentive for the private sector to install them (Rivera, 1996).

Expansion costs are often financed by connection fees, but are often unaffordable for poorer households, especially when there is little access to credit (Johnstone & Wood, 1999a). In low-income areas, costs are also likely to be higher because such settlements are usually unplanned and it may be difficult to install pipes efficiently (Johnstone & Wood, 1999a).

Table 5 illustrates proposed mechanisms to lower connection fees.

Table 5: Mechanisms for reducing connection fees

Cheaper connection fee	Lower charge for connection to low-income households
Welfare connections	Free or subsidised connections for low-income households
Labour contribution	Option to contribute free labour to help with the connection in lieu of payment
Grants	Government-funded free connections to low-income households
Spread payments	Option for low-income households to spread the cost of the connection over a longer period of time (e.g. 5 years) so the full charge is not required up-front
Micro-credit	Access to small-scale finance for the initial connection charge
Pooled investment	
Cross-subsidise with revenue from all users	Connection charges are financed from revenue from all users and not only those making new connections

Sources: Johnstone & Wood, 1999a; Lyonnaise des Eaux, 1998

Despite the fact that different structures to allow connection costs to become affordable to low-income people may help, in most cases charges will still have to be made in view of high infrastructure costs of making new connections (Lyonnaise des Eaux, 1998). For instance, in Queenstown (South Africa), Aqua Gold makes an attempt to expand into poor areas, but makes connections at cost that leads to expensive charges for low-income people (Tandy, 1997). Public sectors are also keen to reduce direct government subsidies into water and sanitation services to low-income groups, and Briscoe (1992) believes that people need to choose the standard of service they want and are willing to pay for, and any available public funds should be reserved for communal services that benefit a greater proportion of the community.

Options proposed that eliminate the need for the poor to pay for their own connections include legalising informal vendors and allowing the resale of metered water. These initiatives are often proposed, but seldom carried out, largely due to the lack of reconciliation between informal and formal providers. The resale of metered water is often made illegal under PSP agreements, principally because the private company may regard it as loss-making, and serves as a disincentive for the poor to pay for their own connections and water supply. However, Box 11 describes the positive effect on the poor of the resale of water in Jakarta, Indonesia.

Box 11: Impact of the legalisation of the resale of water on the poor in Jakarta, Indonesia

In 1990, the municipal water company in Jakarta permitted households with metered connections to resell water, in order to improve access and lower the cost of water to the poor.

A study of the market impacts of this deregulation showed direct benefits to poor consumers, as the average household bills of customers who had previously purchased their water from private vendors or standpipes had decreased by 59% and 26% respectively. These customers had also benefited by saving time for collecting water. Users who did not purchase resold water from households with connections also indirectly benefited, as private vendors and standpipe operators were forced to lower their prices due to this new competition.

The study also found that not all households that had the opportunity to connect to the mains supply did so, even when they would benefit in terms of cost and time savings. This is due to two factors: firstly the US\$42 connection fee to be paid in a lump sum; and secondly concern from households over the ability to budget water on a monthly, rather than a daily, basis. Residents were worried that using water without seeing how much they would pay until the end of the month would encourage them to use more water than they could afford, and be faced with a bill at the end of the month that they would be unable to pay.

The study concludes that the resale of metered water by private households plays a central role in the provision of water to poor households; and that the *indirect* impacts (lowering of costs by other providers) from the measure may be even more than the direct impacts (cost and time savings) for those households without their own connection. The study also shows that the consumer price of water depends on the market structure in force, and the importance of *competition* in reducing costs for poorer residents.

Source: Crane (1994)

3.3.8 Technology/Infrastructure

In the case of the poorest areas where conventional technological solutions are not feasible, a possibility is interim provision until permanent infrastructure can be installed. This may also require prioritisation by area in order that unserved settlements do not wait longer than necessary for a basic supply (Johnstone & Wood, 1999a). There is also a need for different levels of service alongside each other to meet differentiated types of demand (Collignon *et al*, 1999). For instance, in Ivory Coast, the private operator, SODECI, implemented three tiers of provision in accordance with users' needs and willingness to pay (Lewis & Miller, 1987):

- pipes water to direct users
- public fountains with coin-operated taps
- monitoring to prevent vandalism and for maintenance
- proliferation of private vendors who obtain water from fountains, private connections and illegal connections and resell – SODECI plans to install more fountains to capture this section of market

SODECI is able to recover costs and make profit with this model.

3.3.8 Sanitation

The literature reveals little information on progress in increasing sanitation coverage under PSP agreements. The expansion of sanitation facilities is a recurrent problem, as often potential recipients do not see a need for sanitation, and are unwilling to pay for infrastructure and connections, that are often more expensive than those of water. The means by which sanitation is promoted and marketed to poorer groups within PSP is an area that needs to be further explored.

3.3.9 Participation/users' perspective

Under PPP arrangements, it is important for the private operator to establish a good relationship with households (Johnstone & Wood, 1999b). The literature frequently refers to the improvement of customer services under PSP arrangements. For example, in Buenos Aires, improvement in terms of better customer service and payment arrangements has been documented (Rivera, 1996). However, the extent to which the poor have benefited from such improvements is unclear. The literature does not appear to enter into discussion of how the poor can be assured access to adequate customer service arrangements. An isolated case in the literature where customer services are being adapted to suit the needs of low-income people is in Durban, where multi-lingual customer services are available; however this initiative has been taken by the public sector and not PSP (Tandy, 1997).

3.3.10 Information

There is very little information on the types of information that need to be collected and distributed during the operation phase of contracts. Johnstone & Wood (1999a) stress that a lack of availability of information to low-income households can lead to uninformed choices regarding the use of water and sanitation, for instance, people may consume too little water or water of too poor quality. Lyonnaise des Eaux (1998) suggests the following types of information to be collected during the operational phase in order to achieve a demand-led approach to water and sanitation to low-income groups:

- market research
- product development
- service provision adapted to demand
- marketing of services offered
- supervision and follow-up of services

3.3.11 Regulation

At the operational level, regulation must seek to protect the public interest, by closely monitoring the quality of provision and health impacts, as private agencies may put more emphasis on the reduction of costs (Johnstone & Wood, 1999a). However, differentiating between private sector cost-cutting and protecting companies from shifting and unrealistic demands for additional expenditure may require a fine distinction on the part of the regulator (Rees, 1998). A further problem is that service providers may be subject to regulation from different ministries, which may lead to a “common agency” problem whereby several different public agencies are involved in regulation, but without internal co-ordination (Johnstone & Wood, 1999a).

There is also the question of what indicators will be used to monitor the extent of service and improvements made by the private operator. Usually, targets will be set and performance monitored in terms of percentages of areas served or number of new connections made. The effectiveness of such indicators is open to question. In La Paz-El Alto, the contract was more innovative, in that it set out the number of new connections to be made, which is easier to monitor than the coverage as a percentage (Komives & Brook Cowen, 1998). The regulator is also obligated to ensure that the standards of service provision meet the basic needs of the users, and that water consumption is sustainable, that is, it is not used excessively by those who can afford it to the detriment of other users (Johnstone & Wood, 1999a).

The issue of higher costs under private-sector operation being passed on to the consumer, in order to increase the private sector’s profits, is one that is frequently noted in the literature. Several authors question how to ensure that benefits are passed to the consumer, and not to the profits of the private sector (Johnstone & Wood, 1999a; Nickson, 1997a). The only firm structure documented in the literature appears to be the UK price cap mechanism, which controls water and sewerage prices and sets maximum price rises, and allows operators to retain profits made from cost reduction and additional efficiency (Neto, 1998). Rivera (1996) on the other hand argues that cost reductions through efficiency should accrue to the private operator. In Buenos Aires, he argues, the price to the consumer is very low when the improvements in service and coverage are considered.

3.3.12 Water resources/Environmental management

Environmental regulation and responsibility for ensuring the protection of natural water resources is often delegated to independent authorities under PSP agreements, thus is little mentioned in the literature. For instance, in the UK, this responsibility is undertaken by the regulator, OFWAT, and the National Rivers Authority (Neto, 1998). In this way an independent authority is able to oversee that the private partner does not exploit environmental resources for profit. The impact of PSP on the local environment is not an issue discussed in the literature.

3.4 Termination phase

Due to the fact that private-sector participation is a relatively recent development in the water and sanitation sector, dating in the most part from the 1980s and 1990s, there is relatively little information on the termination phase of private-sector contracts. In addition, the cases that most frequently recur in the literature, such as the Buenos Aires concession, tend to be longer-term agreements lasting approximately 25 to 30 years, and thus have another 10 to 20 years to completion. The function of this section is directed towards examining the issues that may need to be considered for evaluating how PSP has impacted on the needs of the poor.

It goes without saying that an examination of the termination phase of PSP initiatives will be mainly based on analysing the benefits and disadvantages of PSP to poor users, with respect to issues such as legislation and regulation, with the aim of drawing lessons for future projects. Although many projects have not yet arrived at this stage, many authors speculate on issues that may need to be considered at that stage.

As already noted, at this stage such thoughts are based on speculation of what may happen on termination of contracts. As Ramaema (1997) points out with reference to the BOTT contracts in South Africa, the true test of the degree of success of the projects can only be measured after the assets have been handed over to the operating authority. Ramaema (1997) suggests that the indicator to be used to measure the degree of success of the transferred infrastructure should be the sustainability of the assets, while Tandy (1997), also with reference to South Africa, notes that the contract specifies that the developments made by the private company will be *sold* back to the municipality at "book price" on termination. How this will work in practice remains to be seen.

The termination phase is the stage of the PSP process where renegotiation of contracts will occur, since at this stage it seems unlikely that a public agency will wish to regain direct control of urban services. The options available to the public sector at this stage are the subject of much discussion and debate in the literature. On termination of a contract, the public sector is in a position to renegotiate the contract with the same provider or put the contract out to tender. The position of the outgoing contractor is considered to be privileged, since that firm has direct experience of operating the utility over the term of the contract. This may lead to a variety of scenarios, in which the private sector is often considered to have the upper hand. The public sector may then find that it has little bargaining power; as the re-tendered bid may have attracted little interest from competitors, who may think that they have no chance against the existing provider; and the existing provider may be in a position to negotiate new, lower rates (Klein, 1998). McCoy-Thompson (1998) notes that the risk of the private firm renegotiating at a higher rate is increased in proportion to the level of monopoly it controls. In Phoenix, Arizona, this type of monopolization of solid waste management was avoided by dividing the city into zones for separate bids, and the resulting competition meant that on termination, some public-operated contractors lowered their costs and won some contracts back from the private operators (McCoy-Thompson, 1998). Klein (1998) notes that, unless the contractor is formally obliged to continue provision until a new contract is negotiated, the government may be held over a barrel, as it cannot allow water and sanitation services to be interrupted on termination of the contract.

As noted previously, PSP contracts are a relatively new concept for low- and middle-income countries, and many nations have opted for a stepwise approach to PSP, with an initial low-risk and commitment contract, leading to one in which the private partner has greater responsibility. Crosslin (1991) believes that PPPs need better planning, and pinpoints the following aspects where planning could be improved:

- cost and quality of services (for the government)
- restriction of investment and profit opportunities (for the private sector)
- need to identify successful project parameters (by the government)

To this end, Crosslin (1991) suggests a methodology that allows governments to be able to identify successful parameters for a PPP and negotiate a favourable contract for both parties.

Other issues that need to be explored on termination of contracts include the types of technology that proved successful for extending or improving services to the poor; how the poor and their livelihoods³ were affected by private-sector provision of water and sanitation services, and whether poor groups were adequately represented and/or enabled to participate in the PSP process. Lastly, an issue that remains neglected in the literature is the effect of private-sector participation in water and sanitation on natural resources and the local environment, and mechanisms by which this can be ensured and addressed.

Literature is not very helpful in understanding the mechanisms of how changes in PPP take place moving from one phase of PPP to another phase without going through the complete cycle of tendering. It is not very clear whether the issues of increase coverage of the services include the provision of services to the poor or not?

³ Natural, physical, financial, human and social capital

4. SUMMARY OF CASE STUDIES

The following tables give brief details of locations where forms of PPP are present. These cases are tentatively classified as PPPs, as they present significant involvement of the private and public sector and private sector responsibility for one or more of financing, ownership, operation, and cost recovery. Table 6 lists the case study locations, together with information concerning the type of contract and contract arrangements. Table 7 lists the case study locations being researched as part of programmes looking at PPPs in water and sanitation.

Table 6: Summary of PPP case study locations

Location	Type of contract	Summary	Reference(s)
Abidjan, Ivory Coast	Lease Coin-op standpumps	50% private 50% public (SONEG & SODECI)	Johnstone & Wood, 1999a Lewis & Miller, 1987
Aguascalientes, Mexico	Concession		Hazin, 1998 Rivera, 1996
Buenos Aires, Argentina	Concession 30 yrs, consortium headed by LdE Aguas Argentinas	Performance and quality targets set but no specific clauses for poor	Lyonnais des Eaux, 1999? Rivera, 1996 Sansom & Franceys, 1997 Uribe & Willig, 1999
Burkina Faso	Yatenga Project local initiative	to encourage and support entrepreneurs to set up business initiatives	Wood, 1993
Cancún, Mexico	BOT 14 yrs then Concession 30 yrs	Private construction co. DHC Operated by AGUAKAN Regulated by CAPA (former public water authority)	Hazin, 1998; Rivera, 1996
Casablanca, Morocco	?	Specific provisions for facilitating access to conventional services for low-income populations or customers	Lyonnais des Eaux, 1999?
Colombia	Duopoly approach = mixed private public ownership		Gray, 1997
Conraky, Guinea	Lease 10 yr	SONEG and SEEG	Brook Cowen, 1999 Rivera, 1996
Corrientes, Argentina			Rivera, 1996
Eastern Cape, KwaZulu Natal, Mpumalanga, Northern Province, RSA	BOTT	Set targets for minimum servicing standards for unserved areas	Ramaema, 1997
Gdansk, Poland	Lease 30yrs	Lyonnais	Rivera, 1996
Jakarta, Indonesia	Concession	no specific clauses; but alternative distribution systems allowed	McGivern, 1999 Lyonnais des Eaux, 1998
Kenya	Water kiosks	Water kiosks in conjunction with many local companies	Lewis & Miller, 1987 Wood, 1993
La Paz/El Alto, Bolivia	Concession (25 years)	Aguas del Illimani consortium under Suez Lyonnais des Eaux Objective for switching to a private concession was to expand services to low-income households, as existing public utility only service central city residents.	Komives & Brook Cowen, 1998
Limeira, Brazil	?	No specific clauses but pricing structured so first amount consumed is cheaper; and shared meters	Lyonnais des Eaux, 1999?
Malaysia	Management, service and Bot /		Subramanian, 1993

	combination of the above		
Manila, The Philippines	Concession?	Contract specified coverage rate; low flat rate for water; spread costs for low-income customers	Lyonnais des Eaux, 1999?
Puerto Vallarta, Mexico			Rivera, 1996
Queenstown, Mlungisi, Ezibeleni, RSA	Concessions	Aqua Gold	Tandy, 1997
Santa Fé, Argentina		Regulator defines poor areas and level of service to be provided; subsidies for water supply from state govt	Lyonnais des Eaux, 1999?
Santiago de Chile	Concessions and service contracts	State agency EMOS Government social policy, subsidies and loans for low-income consumers	Rivera, 1996 Uribe & Willig, 1999
Stutterheim, RSA	Lease		Tandy, 1997
Sydney, Australia	BOO		Alla & Manzi, 1996
Tucumán, Argentina			Rivera, 1996

Table 7: Summary of PPP programmes and case study locations

Programme	Locations	Focus
Business Partners for Development (BPD) Water and Sanitation Cluster World Bank/DFID initiative	Buenos Aires, Argentina Cartagena, Colombia Durban & Pietermaritzburg, South Africa Eastern Cape & Northern Province, South Africa La Paz-EI Alto, Bolivia Marunda (E. Jakarta), Indonesia Port-au-Prince, Haiti	Tri-sector partnerships (government-civil society-private sector) Focus on large-scale PPPs
IIED project: "Private Sector Participation in Water Supply and Sanitation: Realising Social and Environmental Objectives", funded by DANIDA	Abidjan, Ivory Coast Buenos Aires, Argentina Córdoba, Argentina Manila, Philippines Mexico City, Mexico	How to realise social and environmental objectives under increased PSP, focusing on large-scale (international) PSP contracts
Programme Solidarité Eau French-based NGO	Ethiopia Guatemala Haiti Mali Mauritania Paraguay Senegal Yemen	Small-scale private sector initiatives
Water and Sanitation Programme World Bank/UNDP	Asunción, Paraguay Bamako, Mali Barranquilla, Colombia Conraky, Guinea Córdoba, Argentina Cotonou, Benin Dakar, Senegal Dar-es-Salaam, Tanzania Kampala, Uganda Lima, Peru Nairobi, Kenya	NGO and small-scale private sector: specifically small-scale water markets and impact of independent providers on water and sanitation delivery and comparative advantages with respect to the large-scale (both public and private) monopoly enterprises

5. EMERGING ISSUES

This literature review has sought to examine the literature on private-public partnerships from the perspective of water and sanitation service delivery to *the poor*. The specific aspects examined have attempted to document both ways of improving and extending service to the poor and to highlight issues in which the poor are given little consideration. Literature focusing on the poor within PSP is almost exclusively confined to material from the World Bank, international donor agencies and large-scale water companies, while much of the literature from other sources focuses on the public-private debate and issues of cost-efficiency under public and private management. The aim of this discussion section is to consider and discuss some of the main issues relating to the poor that have been identified through the review. It is also useful to remember that there may be many good practices going on which have not yet been documented or published and on the other hand, there may be many bad practices in PPP which have not yet been documented or published. The review here is only an indication of what may exist on the ground.

One of the key questions arising out of the information collated here is how social objectives can be passed on to private companies, given that private entities function around commercial objectives. While this review, as well as the research project of which it forms part, adopts a neutral stance with regard to the public-private debate, this question remains a key one if the needs of the poor are to be addressed under PPP arrangements.

A further important issue arising out of this review is the attractiveness of the water and sanitation sector in general to the private sector. As stated earlier, the water and sanitation sector is considered as the least profitable and most risky urban service sector. This has a range of implications for the extension of services to low-income groups both on a macro and micro scale. On a macro scale, water and sanitation services are more attractive to the private sector in countries with buoyant economies and thus concentrations of income, or in countries with high concentrations of population, and this largely explains the concentration of large-scale PPPs in Latin America and South-East Asia. The reverse side of this is that the countries least likely to attract PPPs are the poorest and smallest countries, such as those in sub-Saharan Africa. On a micro scale, increasing service provision directly to the poor is generally considered to add risk and expense to the enterprise. It is therefore necessary to consider how services can be extended to the poor at costs that they can afford; and the role of civil society and small-scale providers may be significant here, as will be discussed below. Large-scale PPPs are also more attractive in areas with high concentrations of population, namely large cities, which means that small towns and rural areas are less likely to attract (large-scale) private sector. This situation may have significant implications for the poor in small towns and rural areas if PPPs are able to extend services to them, and thus ways of addressing this imbalance also need to be considered.

Related to the above discussion is the difference between the water and sanitation sectors under PSP. In general, sanitation is less attractive for private sector involvement due to its more complex nature in comparison with water provision. Sanitation facilities are not only more complex and expensive than water facilities, but also suffer from a lack of demand and willingness to pay by users. The issues of lack of demand and willingness to pay are being addressed with regard to the sanitation sector as a whole, but are of particular importance within PSP arrangements, as the question focuses on how to extend provision of services to people who neither want them nor think they need them, when provision is conditional on their payment for the facilities and service. The negative health externalities caused by inadequate sanitation provision for both users and communities as a whole are well documented in literature related to poor urban environments in developing countries. The issue of how to further integrate sanitation provision into PPP arrangements will also be discussed at greater length below.

The general consensus of the arrangements that constitute *public-private partnership* appears to consist of contracts where the private sector is committed to major responsibilities of the utility (financing, ownership, operation, cost recovery), and/or commits investment funds and shares in commercial risk, as opposed to simple contracting-out arrangements between the public sector and a private operator. Although, the term PPP is seen more as applying to arrangements that have a specific "partnership" approach, rather than any type of contract between the public and private sectors, the application of PPP to smaller-scale and informal provision is lacking.

The implications of the distinction between PSP and PPP as described above are highly significant for the impact of PPPs on the poor. Contracts with the private sector, which are not considered to be PPP, such as simple service and management contracts, are characterised by greater government power to control the activities of the private sector. For instance, the local government would be able to contract a provider

specifically to install services in a previously unserved area. However, with contracts where the private sector has a greater degree of responsibility and liberty to decide what level of service to provide, where to extend and improve services, and how much to charge, there is greater scope for private sector to determine the extent to which services to the poor are improved. Though it may be simpler to appoint a service contract and manage many simple contracts, but in situation where the infrastructure needs huge capital investments and the responsible organisation cannot afford to invest such capital nor can they afford to get financing with short repayment time, more complex contracting arrangement have been proposed as the only solution. If the private operator regards poor users as more risky or more costly, this could have a significant bearing on the level of service provided to low-income groups. Partly for this reason, much attention is given in the literature to conditions of contract and explicit specifications for provision to low-income groups, and the role of regulation; and these aspects are crucial within an arrangement in which the private sector has wide scope for decisions that may affect the poor. This distinction also acquires greater significance in practice, due to the dominance of concession, lease and BOT-type contracts, which are those in which the private operator has greater risks.

A more extreme conceptualisation of *public-private partnership* proposed entails ongoing consultation and collaboration between the two partners on policies, regulations, procedures and government action in order to improve the enabling environment for firms and NGOs. The literature discussing PPPs seems to be exclusively confined to the *structure* of the arrangement, primarily focusing on institutional responsibilities, tariff structure, and the framework for regulation; and there is little or no documentation of the *nature* of the relationship between the two partners with regard to how decisions are reached and measures jointly implemented. In short, the *partnership process* is not discussed in the literature; and this may be an interesting aspect for further exploration, in order to learn how public and private sectors can co-operate in a way that is mutually beneficial and positively influences decisions affecting poor users. Relevant to this discussion is the issue of the role and participation of civil society organisations within the PPP process and arrangements. Possible roles for NGOs, for example, could be facilitation of the relationship between the public and private partners, execution of field-based surveys and needs assessments of low-income groups, and representation of the needs and interests of the poor. This is also an issue that would benefit from further exploration. Finally, the role of the participation of beneficiaries within PPP arrangements – at all stages of the process – is also an issue that is not discussed in the literature. Participatory planning and citizen involvement in the planning process are widely written about; however it does not appear that this issue is being discussed in relation to PPPs. The discussion of the involvement of poor users within the PPP process at present appears to be restricted to specific stages in the process, such as levels of willingness and ability to pay, level of service desired, and labour contribution in the installation of facilities. The way in which the poor would be able to participate in a more meaningful way, including decision-making in decisions that affect the level of service provided to low-income groups is also an area that merits more examination.

The lack of attention given to small-scale and informal initiatives has been noted in the formal literature. This may be due to the fact that such initiatives lack recognition and are thus less documented than larger-scale projects; or may be due to the fact that they are possibly less likely to be considered as PPP, or even PSP, initiatives (note that most literature searches were executed around variants of the term “privatisation”). The way in which small-scale and informal sector initiatives fit into the conceptualisation of PPP deserves more consideration. As set out in the Inception Report, the project’s definition departs from the assumption that:

The public sector (local authority or state) will feature in all cases, either directly (for example, as a regulator) or indirectly (for example, as principal where a commercial firm acts as an agent) (Inception report, October 1999).

As noted above, the consensus on the arrangements that constitute *public-private partnership* were defined as consisting of arrangements whereby the private sector undertakes significant responsibilities in terms of the financing, ownership, operation, and cost recovery of the service, as well as committing investment funds and sharing in commercial risk. As noted by Solo (1999), these criteria can equally apply to small-scale water and sanitation providers:

Small-scale water and sanitation enterprises are not simply marginal peculiarities with limited replicability. In Guatemala City, over 200 independent operators are responsible for service provision to over half of the population of the metropolitan area. When allowed to flourish, the small-scale entrepreneurs are efficient, competitive and replicable – requiring no subsidies or monopolistic conditions (Solo, 1999:123).

The virtue of the independent private sector is that it makes contracts with customers, not with governments, and is at its best when entrepreneurs must compete for clients and assume the full risks of their own investments (Solo, 1999:127).

In fact small-scale operators may take on a *greater* degree of responsibility than formal private sector operators. For instance, even if the activities of small-scale operators supported by the public sector can be technically described as service or management arrangements, small-scale operators will still commit investment and take on commercial risk, which would not be the case with the formal private sector. Another feature of small-scale operators that is often overlooked is the fact that they only target *poor and unserved* customers, and therefore their services are highly relevant in the discussion of extension and improvement of water and sanitation services to the poor.

The barrier to the consideration of the small-scale private sector may lie in the lack or absence of formal links with the public sector [or even with formal private operator in case of PPP], although there are cases in which the government has engaged in joint provision with the small-scale private sector. This has prompted the recommendation by several authors that the possibility of strengthening informal/small-scale provision to the poor should be explored. There are indications that, if small-scale/informal private-operators come under greater government regulation and price control, the poor would benefit from these arrangements. Such arrangements may be particularly beneficial in areas where difficulties arise in the formal provision of water and sanitation services under PPP agreements, such as illegal and transient settlements, expanding settlements on the edges of cities and settlements built on land sites which present difficulties for the installation of infrastructure. In this way, Solo (1999) stresses that the role of small-scale private sector needs to be rethought, in the same way that public sector and large scale private-sector provision have also been rethought.

An examination of the issues related to the contractual stage of the PPP process has shown that the needs of poor users do not appear to be taken into account when the initial decision to engage in a PPP arrangement is reached. In general, this decision seems to be based more on the needs of the government sector (for instance, reduction of internal spending), rather than a conscious decision to extend services to poor users. The process of instigating the PPP process - initiating the tender, bidding, negotiating finance and the terms and conditions of the contract - needs to be better understood in order to obtain a clearer picture of how the decision-making process is influenced, and therefore how the needs of low-income groups can best be incorporated into these processes. Insight into the workings of this process would shed light on the degree of bargaining power the public sector has for stipulating provision to the poor within PPP contracts.

Although some attention is given to the inclusion of the needs of the poor in contracts, these tend to focus on extent of coverage, levels of service and technology, tariff structures and financial arrangements to suit the poor. Ways of actually determining and assessing these needs in each specific context are often not detailed. For instance, the level of service expected and how much low-income people can afford to pay are often referred to, but there is little evidence of such studies actually being carried out in practice. In particular, the needs of the poor that should be considered and possibly written into contracts are ill-defined and need greater attention. Again, the roles of local consultants and NGOs could play a significant role in this respect.

The importance of such needs being explicitly articulated within the contract is frequently stressed in the literature, including material from large-scale operators. Pro-poor clauses are proposed based on the factors listed in the previous paragraph, however, greater attention to how the needs of the poor can be included in contracts may lead to contracts that better respond to the needs of the poor. The importance of this can be illustrated by the case of La Paz-El Alto, which is frequently cited for containing pro-poor clauses in the contract. However, the contract only requires provision to poor areas if they meet certain criteria; and the areas that fail to meet these criteria – and hence remain unserved – tend to be those that are the most marginal and thus the poorest residents are no better off under the PPP. While specific conditions can easily be included in contracts, wider social and public health objectives are rather more difficult to define and include.

Several ideas of how to deal with the poorest people under PSP are proposed, and include direct government financial assistance, incentives to the operator, alternative/interim measures for poor users and prioritisation of low-income areas. An underlying barrier to the extension of formal services to illegal settlements is land tenure, and, although this is frequently identified within the literature, in practice it does not appear that land tenure is being regularised, and this could be considered as an appropriate role for the public sector within the PPP. The consolidation of informal sector provision is proposed in a number of instances, and, while there is wide scope for this to be both an appropriate and feasible solution, it must be questioned whether this should be advocated as a short-term or long-term measure for low-income areas.

A further factor that deserves more consideration is the level of flexibility awarded to the private operator for devising the specific details of provision to poor users. For instance, with regard to levels of service, specifying in the contract that connections have to be in-house may negatively impact on the poor when this restricts their choice of level of service. However, on the other side of the coin, flexibility to the private sector may also allow the private sector too much freedom to determine what level of service is provided to the poor, which could have a negative impact on poor people if that level is minimal.

The review of literature has noted the difficulty of reconciling the perspectives of the public and private sectors with regard to service provision in PPPs, given that each entity functions around different objectives and has a different working culture. Once again, the possible role that civil society organisations could play as both a “neutral” agency able to mediate between the two sides – especially during the initial stages of the PPP when the public sector in particular is adjusting to its new role – and, more importantly, represent the needs of the poor, is significant. The representation of the needs of the poor under the PPP arrangements are not considered in the literature, and Despite the recognition of this issue in the literature and its exploration through the Business Partners in Development initiative, it deserves more in-depth examination.

As noted in the literature review, water and sanitation issues with regard to the poor have tended to focus on access to services, and relatively little attention has been paid to the organisation, management and financing of services to the poor. There is hardly any significant attempt to capture the perspective of the poor or to gauge the satisfaction level of the poor households.

Private sector operators often insist on a certain degree of monopoly with regard to water and sanitation provision, and this is the most common way for the operator to increase its security and reduce its risk. In addition, the nature of the water and sanitation sector means that competition is more difficult to introduce. The implications of monopoly provision are most often discussed from the perspective of the public sector with regard to levels of competition possible under varying degrees of monopoly. For instance, one strategy often employed by local governments is to divide the area planned for private provision into smaller areas for separate tenders to promote competition between areas. However, the implications for the poor are less often discussed. The main danger to the poor under monopoly provision is that tariffs and/or connection charges may be set universally high and outside their affordability, meaning that, in practice, the poor do not gain access to better water and sanitation services under PPPs. Monopoly provision by a private operator may also squeeze informal providers out of the market, and may reduce low-income people’s options to use alternative water supplies. For instance, some operators charge a fee for extraction of groundwater within their service boundaries, which could mean that the poor will have to start paying to use their community wells. There are only few, if any, attempts were made to learn from other sectors the best practices on issues like tariff and conditions of contract. This is particularly important as the contract package may include various services.

From the private sector’s perspective, extending provision to low-income groups translates into higher management costs. Higher costs can be attributed to several factors. Perhaps the most significant of these is that low-income areas tend to be areas where consumption is low, and therefore bills are issued for very small amounts, meaning that the administration costs for issuing and delivering the bills and collecting payment are not justified. The installation of meters and the labour required to read them is also cost-ineffective for low-volume users. Other reasons include the difficulty of maintaining user files, as low-income groups are thought to be more transient, and higher proportion of unpaid bills in low-income neighbourhoods. It is unclear whether there is significant empirical evidence that supports these perceptions. The main implication for the poor of these management issues is that higher costs may be passed on to them in the form of higher tariffs or higher connection charges, which may contribute towards making the service unaffordable to them. Various solutions have been suggested, such as dividing users into socio-economic strata, and charging flat monthly rates rather than metering consumption; however, this becomes unprofitable for the operator if low-volume users are numerous. This is possibly an area in which incentives can be offered to operators to promote innovative ideas for investigated more extensively. It should also be clear to the private operators that if they can find a profitable way to serve the poor in their contract they can maximise their revenue base of domestic customers significantly as the poor constitutes a large proportion of customers.

The discussion of legal issues in relation to PPPs has predominantly focused on the role of contractual conditions (in the sense that they are legally binding) and discussion of the broader legal framework that can support the situations of the poor is minimal. Further examination of different legal frameworks is necessary to determine whether existing corporate legislation is adequate to cover new and complex PPP arrangements, or whether new legislation needs to be drawn up. Such legal reforms are among the issues that need to be addressed at a pre-bidding stage of the PPP process. The legal issues become crucial when it related to the issue of ownership of the assets to be used or transferred to the private operators. The many changing legal frameworks in developing countries to facilitate PPP have not been documented in the

literature in any systematic manner neither have we found any indication of disputes arising from PPP arrangements which are specific to the water and sanitation provisions. My be the many concession are not yet mature enough to generate cases laws on issues related to PPP in water and sanitation. The role of alternative dispute resolution mechanisms have also been a topic of any major discussion in the literature related to PPP.

Even if new legislation is introduced to cover PPP arrangements, in developing countries, the issue is often not so much one of complete *lack* of adequate legislation, but *enforcement* of legislation and *access of the poor* to it. Yet again, the role of civil society in facilitating access of the poor to legal mechanisms and representing their interests has been proposed.

Another legal issue that crops up in the literature – more often from case studies than theoretical material – is the existence of legal loopholes that fail to ensure the protection of users. This was illustrated by the case of the private water providers and pre-payment meters in the UK. A further grey area is the extension of legal conditions from the PPP agreement to activities that are contracted out to sub-contractors.

Issues of risk in the literature are almost exclusively discussed from the perspective of the public and private sectors, and minimal attention is paid to the risks to the poor under PPPs. Such risks may include higher and/or unaffordable charges for water and sanitation connections and service, the situation of disconnection and liability for reconnection fees, and reduced access to alternative sources such as community sources and informal sector provision. Mechanisms by which these risks to the poor can be mitigated within PPP arrangements should be given further consideration.

The impact of financial arrangements on the poor within PPP agreements is one of the more common topics to be discussed in the literature. The discussion with regard to low-income groups centres mainly on issues of cost recovery, tariff structure, connection charges and payment arrangements.

An issue frequently discussed with regard to low-income users is the structure of tariffs. Tariffs are often raised immediately after private-sector operation due to the withdrawal of government subsidies. Although the most obvious conclusion of unsubsidised tariffs is that the poor will be negatively affected, it is often emphasised that subsidised tariffs rarely benefit poor users, as they are the most likely to lack access to the service. Several different models for tariff structure that benefit the poor have been proposed. The lack of poor users' perspective on levels of tariffs and how they affect their use of services is clearly lacking – for instance, it may be the case that higher tariffs, but opportunities for the poor to reduce their consumption without incurring penalties, may be preferred to higher flat rate charges for unrestricted consumption. A further potential problem that may affect charges for poor users is if prices rise during the course of the contract and these added costs are passed on to consumers.

With respect to cost recovery, the literature debates whether full cost recovery directly from the consumers – identified as a requirement for the private operator engaging in the PPP provision – benefits the poor. One view argues that full cost recovery will be detrimental to the poor due to the need to raise charges significantly, which may then exceed the affordability of the poor. On the other hand, it is also suggested that cost recovery is beneficial to the poor, because the generation of funds for investment allows the operator to improve and extend services to a greater number low-income users. However, it is also often asserted that one of the reasons why the water and sanitation sector is generally unattractive to the private sector is precisely that tariffs fail to generate enough revenue for future investment. It may therefore be a very delicate – or impossible – balance to strike between tariffs that fund future investment and yet are also affordable to the poor. There is also some discussion on the possible relationship between level of charges and cost-recovery, as it has been suggested that cost recovery is higher if user charges are lower. In practice, there appears to be very little information on how levels of charges influence cost recovery, and how cost recovery affects the poor; although several studies (mainly in developed countries) examine the levels of profit earned by private operators and discuss whether financial gains should be passed on to consumers in the form of lower tariffs.

Suggestions for reconciling the need for full cost recovery and profit for the private operator and affordable charges for the poor include local government guarantees of reasonable flows of funds to the private operator during the early stages of the contract, so the private operator is not forced to raise tariffs so high as to start generating profit immediately. In this way, subsidies that have traditionally applied to service charges could be redirected directly towards the operator. However, given that many country governments have instigated PPP specifically to reduce their burden of subsidies, this may not be a feasible option. Another suggestion consists of alternative cost structures that are *fairer* to low-income groups: charges according to the number and/or size of taps; rateable value of property, and capital investment from taxation rather than user charges (thus reducing the operator's need to increase tariffs so drastically). All of these measures

would entail that users pay a charge that is more relative to a *proportion* of their income rather than based on the actual amount consumed. However, as with other aspects discussed previously in this section, most suggestions that would make the service more accessible and/or affordable to the poor are considered to be unattractive or risky from the perspective of the operator, and therefore it is unlikely that operators would accept provision to the poor under such terms.

Connection charges possibly represent the greatest barrier to low-income people's access to water and sanitation services, as they typically consist of relatively high charges that are not only unaffordable in proportion to the poor's income, but usually have to be paid up-front with a single payment. Access to credit is frequently discussed in this respect, but interest charges should be affordable to the users as they may be hesitant about borrowing money, especially if they have little income to spare once they have paid for essential items. The other dimension is the duration of credit as longer duration may reduce the current amount to pay. The imposition of connection charges is generally accepted as a necessary cost, and, like tariffs, many options to make these more accessible to low-income groups are suggested (such as spread payments and labour contributions). However, the possibility of abolishing connection charges altogether, and recouping the costs through some other means, is not questioned. With other services, such as telecoms, connection charges are not always imposed, and presumably these costs are generated through other charges. This is a possibility that would make services more accessible to low-income groups, and is worthy of further exploration.

With regard to payment arrangements for low-income users – which were highlighted in the management section as one of the issues that presented higher costs to the operator – several innovative and sensible solutions have been proposed, such as block billing. The issue of non-payment is a controversial one, and no consensus has been reached as how to address this, apart from the use of pre-payment meters, which are becoming particularly common in Africa. Private operators are noted for their inflexibility with regard to payment collection, and ways in which arrangements for low-income areas could be more flexible may be beneficial.

The lack of options to the poor under private provision can force them to turn to alternative means of provision, including illegal connections, which is neither beneficial to the user nor the operator, and therefore, the consolidation of informal and small-scale providers is frequently advocated. If, under PPP arrangements, the private sector is unwilling or unable to serve low-income areas, this type of solution may be the most beneficial for the poor.

Though the stand towards the "illegal settlements" from the public sector authorities is clear as they do not want to give any signal that such settlements will be allowed to exist by provision of services formally until they actually take a policy decision about regularisation of the settlements. In cases where a private sector supply the services a view can be taken that such relationship is exclusive to the consumer and the private operate with no commitments from public authorities. The implication of such view can result in increased potential for private operators to serve the poor living on illegal settlements. The issues could be crucial in the cities where the a large proportion of households are living in such settlements.

Generally, water and sanitation provision to low-income areas is complicated by land sites that either complicate or are unsuitable for the installation of conventional infrastructure. This may be because settlements are unplanned and are not laid out in a way that infrastructure can be easily installed, or occupy unsuitable land sites such as steep hillsides or floodplains. The literature produced by operators on innovative designs for infrastructure for low-income areas suggests there is interest in alternative technologies on the part of operators. Again, the possible role for specialised NGOs could be highlighted. The use of contracts to ensure a minimum level of service to the poor needs to be reconciled both with the affordability of pre-defined standards for the poor, and flexibility for operators to define solutions that may better suit the needs of the poor. As mentioned earlier, operators do not always have flexibility in infrastructure design, as contracts may specify a pre-defined type of infrastructure. For instance, in Buenos Aires, a low-cost sanitation system successfully installed in a low-income area was unable to be replicated to other similar areas due to stipulations in the contract that sewerage networks must be of a certain type; and in La Paz, the contract's abolition of standpipes in favour of household connections may reduce access of the poor to a relatively cheap supply of safe water. However, on the other hand, there is the danger that the private sector may use flexibility in the contract to provide a lower level of service to poor areas. The other question with provision of lower standards of infrastructure to low-income is whether such areas will ever be upgraded, or will be left with lower standards of infrastructure for the foreseeable future. The issue of costs must then also be considered in relation to this, as, if people are expected to pay for lower standards, they will later have to pay again for upgrading, which would possibly make it more cost-effective to install the usual standards from the outset. It may be the case that areas will be stigmatised by having lower standards of infrastructure.

Sanitation is a particularly difficult service to be provided under PSP for two principal reasons: firstly, it is not particularly perceived to be profitable for the private sector in relation to costs; and secondly, it suffers from a very low demand on the part of users in relation to water and other services. Addressing both these issues is crucial to improving provision of sanitation services.

With regard to the first issue, the private operator is unlikely to want to invest in sanitation infrastructure if poor users are unwilling to pay for the connection. At first sight, the most simple solution may appear to be investment in low-cost solutions for the poor; however, low-cost solutions may also be less attractive to the private sector if they are not very profitable. A common trend that seems to be emerging from practical experience is the provision of water and sanitation *in conjunction*, rather than the provision of water supply alone with users being able to choose whether to invest in sanitation or not. While there are many examples of PSP in water alone, there are few examples of free-standing PSP in sewerage. When considering PPP tenders in the water and sanitation sector, governments could consider integrated water and sanitation provision to be a condition of contract. However, there may be a need for incentives to the operator to engage in sanitation provision alongside water. In this way, sanitation can be developed in conjunction with water supply at two levels – firstly with operators at the bidding stage, and secondly, to users at the operation stage.

This strategy also seems to have positive implications for addressing the second issue. It is commonly documented that increases in water consumption (as is likely with more convenient and accessible water supply) make the need for adequate sanitation even more crucial. The problem with lack of demand by low-income people for sanitation – irrespective of PSP - has long been identified, and strategies based on the social marketing of sanitation are being used in developing countries. Such strategies have arisen largely from the difficulty of raising demand through the promotion of health benefits, and social marketing strategies target other positive aspects of sanitation that may be more important to the poor, such as the reduction of flies and smells, and the increased social status from owning a private latrine. Although sanitation solutions are a private issue, the particular characteristics of sanitation mean that one household's decision not to use proper facilities can contaminate the environment of others; and therefore this should act as an incentive for the government – through the PPP – to promote the use of sanitation by all citizens. Restricting users' option to choose between water and sanitation, but to market them as an integrated package – which also includes combined charges – will ensure that more poor users have to opt for both water and sanitation facilities rather than water supply alone. However, to ensure that the availability of integrated water and sanitation connections is acquired by users means that up-front connection charges – which will act as a great disincentive, especially when the two charges are combined and hence somewhat higher – will have to be seriously reconsidered. An interesting line of enquiry could be to explore the potential of private sector to promote health and hygiene promotion as a part of their marketing strategy.

The perspective of poor users is lacking in the literature discussing PPPs. The perspective of the poor is particularly lacking prior to the operation phase, and, as noted earlier, there is little discussion of how poor users can participate in the PPP process. However, the perspective of the poor is a crucial consideration for the type and level of service to be provided, as the poor are the consumers who will ultimately decide whether to purchase the infrastructure and pay for the service or not. For instance, prior to the implementation of PPP in a certain area, existing and preferred sources of water must be taken into account, as users will not want to pay high charges for water connections if they are happy with a community source.

It is often assumed that poor users are likely to not pay for water services, which has prompted the design of various pre-payment water systems, especially in sub-Saharan Africa. While other studies have demonstrated that poor people may prefer to budget for water on a daily basis, in order to have greater control over their level of expenditure, the perception that the poor do not pay is an unfounded assumption, and this is an area in which further investigation would be beneficial.

A further area which has received little attention is the issue of customer services. Studies relating to the informal private sector stress that it is crucial for the service provider to establish a good relationship with households, and customer services is a mechanism whereby users can communicate with the provider. However, customer services also need to meet the needs of poor, which means that services must be adapted, for instance in terms of providing services in local languages, and in accessible places, as telephones may be inaccessible to the poor.

Like risk, discussion of information is confined to the public and private sectors, and information provision to the poor is neglected. There is no information about what information needs to be provided to the poor, how it is to be provided (bearing in mind that many low-income users are illiterate) and which party is responsible for this. In the same way, user education is often stressed as a necessary component of service provision

under PPP (for instance, showing users how to use the facilities), but strategies for achieving this and allocating responsibilities are not defined.

The literature gives much consideration to the role and structure of regulation within PPPs, as the private sector needs to be “controlled” in some way in order to ensure that provision is adequate and charges reasonable, and also to ensure that the operator does not take advantage of its market position. The limits to regulators’ responsibilities will be defined in specific situations, but may be confined to the simple verification that the private operator is fulfilling its conditions of contract, for instance in terms of the number of new connections made, and may therefore not have any obligations towards users. If the poor are to be protected within the regulatory structure, the need has been identified to ensure that benefits from gains in efficiency are passed on to the consumer in some form rather than exclusively to company profits. However, structures that are designed to protect the interests of the poor, such as the UK model, often protect the interests of the public and private sectors also, and this can be a difficult or almost impossible task to reconcile.

The main concern with water resource and environmental management is to ensure that such assets are protected under private-sector management. The implications for the poor of resource management can relate to quality or quantity of natural resources. The poor may be negatively affected in two ways: firstly, if priority for water distribution under a PPP agreement is given to commercial or richer private users at the expense of sufficient supply to the poor; and secondly, if water resource management under PPP contaminates a source of water used by the poor. It is time to pay attention to this issues as with increase PPP the problem impacts due to PPP may become significant.

6. KEY NOTES

This brief section will outline the main findings that have been established from the literature review, along with gaps and directions for future research.

It was found that the recurrent themes in the literature relating to PSP included the following:

- Discussion about the different types of PSP contract including pros and cons of each model
- Reports from case studies where forms of PSP are underway, particularly with reference to the degree of efficiency and improvement under PSP and the effects on the cost to the public sector
- Debate surrounding PSP in the water and sanitation sector, with most literature having a positive or favourable stance towards PSP

As noted previously, the literature also fails to present a clear conceptualisation of the term *public-private partnership*, with the distinction between this and *private-sector participation* being ill-defined. A more concrete notion of the partnership aspect of PPPs is lacking in the literature and merits further consideration. The review has also shown how PPPs are often referred to as large-scale and formal sector agreements, leaving it unclear as to how small-scale and informal initiatives with the public sector fit in. The public sector role is becoming less clear under PPP. Even if the public sector transfers responsibility for water and sanitation provision to private operators, it must still be considered whether some the public sector should be allowed to completely renounce its role for ensuring that social objectives in water and sanitation are met. For instance, it should be decided whether the authorities should guarantee that a certain level of provision is made to the poorest users, such as free standpipes (Johnstone & Wood, 1999a).

This literature review aimed to review literature regarding PSP *and the poor*. However, the lack of inclusion of poor users was identified widely and at a number of levels. In general, little material within the published literature specifically discusses the needs of poor users with regard to PSP. Material that does refer to the poor is largely derived from the World Bank and donor agencies. Many issues arising under PSP contracts, such as risk and regulation, are almost *always* discussed from the perspective of the public and private sectors, and not from the perspective of poor users. More specifically, there is very little documentation on perceptions of poor users regarding issues directly affecting low-income groups, such as levels of service desired. The needs of the poor – when discussed – are usually defined from the perspective of operators, with little evidence of field-based research being carried out to determine level of services desired, even levels of ability and/or willingness to pay, which will have a significant impact on the type and level of services that operators would provide.

Case study material also follows this trend. Most case study material documenting locations where PSP is in effect fail to clarify the degree to which poor areas are serviced, and to what extent the beneficiaries of PSP include the poor. For instance, there are many reports that document case studies and which highlight the improvements in that particular instance, however, the impact on low-income groups and areas is seldom mentioned. A clear example is Malaysia, where PSP is well-established in relation to most developing countries, and discussed in several papers, but with a perspective towards low-income users entirely absent (Pillay, 1994; Subramanian, 1993). Rivera (1996) notes the extent to which improvement has significantly affected users - including the poor – is difficult to assess. Rivera also notes that in many cases, the former public systems were so dilapidated that any improvement is significant. Whether or not this view is justified, it does illustrate the need to develop a set of *indicators* to assess the extent to which improvements under PSP have benefited the poor.

Although some material from the World Bank and donor agencies does attempt to document the extent to which PSP initiatives have affected the poor, these tend not to be supported by empirical evidence. Often figures and statistics are presented to support a case, but these tend to be aggregated figures, for instance, the number of new connections made, without specifying the extent to which such figures apply to low-income areas. In some cases, figures are derived from operators, and the degree to which they are accurate cannot be established. It may be the case that, as PSP case studies become more established and researched, more reliable data will start to become available.

A significant trend that has been noted through the review of literature is the dominance of PSP in water and the concurrent neglect in the area of sanitation. The specific difficulties faced by PSP in sanitation have been discussed earlier in the review. This trend has significant implications for environmental health in areas where PSP may be in effect, and the need to address the unattractiveness of sanitation for private operators, the lack of demand on the part of users is a priority for the PSP sector. The packaging of integrated water and sanitation services has been noted as a potentially successful way forward in this respect.

A further area which has received a lack of attention in the PSP discussion is the implication of PSP for water and natural resource management, and environmental protection. With regard to natural resource management, the impact of PSP on the allocation of water among different users – urban, industrial and agricultural – has been alluded to, but very little explored. In relation to environmental protection throughout the complete water supply and sanitation cycle, the debate focuses on how private operators can be regulated to ensure that financial gain is not pursued at the expense of natural resource availability and environmental quality. The household and neighbourhood environment is particularly disregarded in this respect, with most attention being given to raw water (e.g. rivers and groundwater) and river basin ecology.

The dominance in the water and sanitation sector of large-scale contracts in major cities, often by consortia headed by international operators, is a trend that has been noted. The implications for small-scale and informal private-sector initiatives and potential for PPPs in small towns and rural areas has been highlighted as an area meriting further investigation. Solo (1999) have questioned the large-scale monopoly as the natural service provider, and has shown how small-scale/informal entrepreneurs can be both efficient and extremely responsive to the demands of poor users, with a flexible approach to customer services, for instance. Although PSP may prove to have benefits for poor users in some cases, the consideration of alternative arrangements should not be neglected. Such alternatives include smaller-scale private sector initiatives, such as coin-operated standpipes and government water kiosks, and other models, such as water co-operatives, of which one example in Santa Cruz, Bolivia, is documented as having a positive impact on extending services to the poor (Nickson, 1998).

In theory, the objective of any public-private partnership is to entail a partnership between the public and private sector in which the priorities of each sector are combined in a way that is beneficial to each party and also to users. In this way, the private sector's capacity for efficiency and extensive coverage will produce a service that earns the operator a reasonable rate of return and at the same time is consistent with the socio-economic objectives promoted by government. The outcome of such a partnership for users is an improved and more extensive service at a reasonable cost. In practice, different types of partnership in different contexts will have different end results and degrees of success or failure. The determinants of the effectiveness of PPP arrangements are still little researched, yet they are an important factor to better understand the conditions and mechanisms by which such arrangements can be most effective. PPPs are relatively new arrangements, and experiences tend to be compared on equal grounds; however, study on a more individual or case-by-case basis – both between locations and within the same location - may reveal factors that determine the effectiveness of PPPs, and thus lead to a better understanding of the conditions under which such arrangements work best. It is interesting to note that if such conditions can be achieved then may be even a public sector utility can improve the provision of the services. As noted by Nickson (1997b) such conditions may not be related to the fact that water and sanitation are managed by private organisations *per se*, but rather determined by issues such as conditions of contract, tariff structure and regulation.

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Appendix 1 Literature searches for Private-Sector Participation in Water and Sanitation

Catalogue	Dates	Keywords	Hits
BIDS SSCI	1990 - 1999	private & public & water	35
BIDS IBSS	1990 – 1999	public & private & water	19
BIDS SSCI	1990 – 1999	private & urban & water	19
BIDS SSCI	1990 – 1999	informal & sanitation	11
BIDS SSCI	1990 – 1999	urban & poor	845
BIDS SSCI	1996 – 1999	poverty & partnership*	18
BIDS SSCI	1996 – 1999	water & partnership*	6
BIDS SSCI	1996 – 1999	public & private	3
BIDS SSCI	1996 – 1999	informal & sector & services	48
Edina Ei Compendex	1990 – 1999	public-private	?
Edina Ei CAB Abstracts	1990 – 1999	public & private	4
BLDS	- 1999	water/sanitation & urban & privat*	21
BLDS	- 1999	water/sanitation & urban	200
BLDS	- 1999	partnerships & urban	6
BLDS	- 1999	public & private & water	31

Table 3: Websites consulted for information on PSP in water and sanitation:

Website	Section(s)	Keywords	Hits
Department for International Development www.dfid.gov.uk	Knowledge and Research contracts	N/a	-
Economic Commission for Latin America and the Caribbean www.eclac.org/espanol/catalogos	Publications catalogue	N/a	265
ID21 www.		N/a	-
Institute of Development Studies, Sussex University www.ids.ac.uk	Poverty and environment	N/a	-
Inter-American Development Bank www.iadb.org	Publications catalogue	Privatization	37
Internet search engine http://www.google.com	-	Public private partnerships water	14994
Internet search engine www.google.com	-	Public-private partnerships poor people	1330
Internet search engine www.google.com	-	NGOs water sanitation	5406
United Nations www.un.org/ea/sustdev	All	N/a	-
United States Environmental protection Agency www.	All	N/a	-
Water Supply and Sanitation Collaborative Council www.	All	N/a	-
World Bank www.worldbank.org	Water and Sanitation Program PPIAF partnerships in development private participation in infrastructure	N/a	-