The role of privatisation in the water sector

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Abstract

This paper presents an overview of the situation in developed and developing countries with respect to the private sector involvement in management of water utilities. Various management options ranging from fully publicly owned systems to fully privatised models have either been implemented or are under active consideration worldwide. Current trends in relation to water industry privatisation within a global context are described, as are the associated risks and potential benefits. Mention is made of guiding principles and options for change in water sector privatisation.

The conclusion is that the success of greater private sector participation can be enhanced by establishing transparent and incentive-based contracts. In addition, a strong regulatory regime that has the capability to monitor the quality of service provided and tariffs charged is a necessity.

Introduction

Water, being one of the basic ingredients needed to sustain life, has historically been viewed as a 'social good' and reasonable governments remain under moral obligation to ensure safe and affordable provision of water related services. Providing services of an acceptable standard is a capital-intensive task, particularly in places where basic infrastructure is non-existent. World leaders have, at least on paper, pledged to halve the population without access to safe drinking water and sanitation facilities by 2015. Considering the current pace and trend of investment, this appears extremely ambitious. According to some estimates, approximately US$ 180 billion a year is required to facilitate provision of all water related services. The gulf between the *required* investments and the financial resources *invested* annually (US$ 80 billion) is widening (UNIS, 2003). Central and Eastern European Countries need a total investment of up to ≠50 billion in order to bring their water and wastewater systems up to European Union standards (Global Water, 2000). The provision of water and sanitation services in developing countries requires US$ 20 billion against $10 billion currently invested annually. Mobilising this level of investment, particularly in developing countries, is not an easy task, especially when most of their generated revenues are needed for debt servicing and territorial security requirements. Lack of optimised financial management coupled with investments in improperly conceived water projects adds further complexity.

The International Conference on Water and Environment held in Dublin in 1992, provided additional impetus towards recognising water as an 'economic good' and encouraging initiatives aimed at exploring incentive based measures to attract private sector finances (Gleick *et al.*, 2002). This paper explores the role of privatisation in the water sector: its forms, trends, risks and benefits. Guiding principles for implementation and options for change are suggested.

Forms of privatisation

Privatisation is an instrument referring broadly to the transfer (or outsourcing) of some or all of the traditional water service functions (e.g. water distribution and

treatment, wastewater collection and treatment, customers services) and, in some cases, ownership of infrastructure assets and water resources, from government to a private party for a certain period of time under conditions set in contractual agreements. Privatisation can be in part, often referred as public-private partnerships (PPP) or in full, in the form of vertically integrated water companies owned and managed by private entities. A brief description of possible forms of privatisation is provided below. More detailed explanation of these forms is available in OSBC (2002a).

1. *Outsourcing specific functions:* The private sector is involved in taking on some water utility functions, which may require technical competencies (e.g. field maintenance or other services). The public ownership aspect remains unchanged.
2. *Long-term operation and maintenance (O & M) contracts:* The public ownership of the infrastructure is maintained. The private contractor undertakes O & M activities for a fixed term (normally 5 to 20 years). At the expiry of the specified term, the contractor returns the infrastructure in working condition as agreed in the contract. Payment schemes can vary, but they relate to the scope of service rendered and are not subject to demand, rate or revenue risk.
3. *Long-term licensing contracts:* These are similar to O&M contracts except that, in this case, the public utility may also transfer demand risk and customer billing to the private contractor. Payment schemes can vary, but unlike an O&M contract, a licensing contract would require the private sector service provider to bill customers (and may remit a portion of the receipts to the utility). This arrangement makes the contractor subject to demand risk.
4. *Project specific public-private partnership:* The public utility may partner with a private company to build an individual capital project (e.g. treatment plant) or a series of projects bundled into one contract. This could be extended to O&M contracts for optimal economic efficiency. There are several variants of this type of partnership but two are in common practice: a) Design-build (and design-build-finance-leaseback); and b) Design-build-operate (and design-build-finance-operate)
5. *Long-term concession contracts:* These are similar to long-term licensing contracts, except that in this case the private contractor is asked to invest in capital works. The utility continues to own the assets but the contractor controls them.
6. *Localised privatisation through investor-owned utilities:* A government might choose to allow localised privatisation through investor-owned utilities, subject to licensing obligations imposed on those utilities. In such cases, utilities are sold, either by sales of shares or transfers of assets, to the private sector, which operates the utilities on a commercial basis. Because asset ownership and control passes to the private sector, it is responsible for all capital costs and has an indefinite planning horizon. To protect users while ensuring that private sector utilities earn a fair return on their investment, some form of price regulation is put in place. Water industry privatisation in England and Wales is broadly based on this model.
7. *Jurisdiction-wide privatisation of utilities:* A government might choose to privatise its water and wastewater utilities across its entire jurisdiction, subject to licensing obligations imposed on those utilities. It is similar to localised privatisation except in geographic scope.

Trends

According to Neal *et al.* (1996) and Savas (1987), there are five potential drivers for privatisation. These are:

- *Societal* (the belief that privatisation can help satisfy unmet basic water needs);
- *Commercial* (the belief that more business is better);
- *Financial* (the belief that the private sector can mobilise capital faster and cheaper than the public sector);

- *Ideological* (the belief that smaller government is better); and
- *Pragmatic* (the belief that competent, efficient water-system operations require private participation).

In most developed countries, policies driven by commercialism and pragmatism are central to the water sector transformation. In most developing countries, societal and financial drivers are significant players. In the USA, there has been shift towards privatisation due to ideological reasons (Gleick *et al.*, 2002).

In the last decade, governments in over 93 countries have introduced varied levels of privatisation in water sector management. This accounts for some 6 % of the world population catered through private operators. Figure 1, as an example, shows the percentage of population served by public and private operators in EU states. An upward global trend is also observed for new PPP contracts (Figure 2). Despite this growth trend, the proportionate increase in population benefiting from PPP ventures, as illustrated by Figure 3, is modest. It is anticipated that private sector participation is likely to grow in the future (Table 1). Rapid growth (15-20 % annually) is predicted for the USA, while in regions where private water companies are the majority suppliers (UK and France), further growth of private water operators is likely to be marginal.

The global water market is dominated by French companies: Vivendi Water, SUEZ and SAUR. Other key players are companies from the UK and USA. Figure 4 shows the revenue share of the top ten investor-owned water companies from these countries. There are also a few smaller international operators from Spain and Italy. Figure 5 shows water sales figures from the major international operators. Population coverage by the largest French operator is shown in Figure 6. Population catered for water and wastewater services by SUEZ, the second largest water multinational, is shown in Table 2.

Figure 1: Percentage of population served by the public and private (including PPP) operators in EU member states (Hall, 2001)

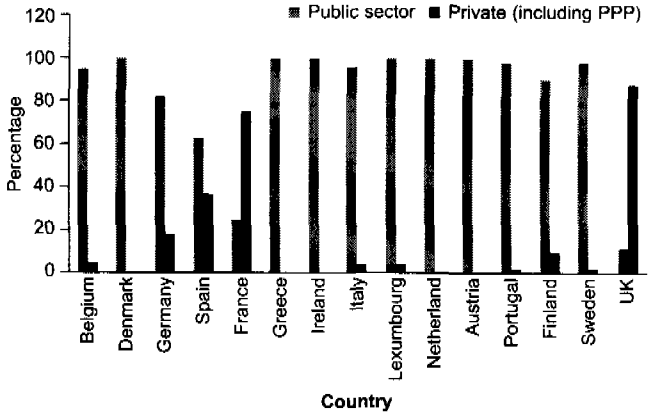


Figure 2: Increase in PPP contracts from 1999 to March 2001 (Nickson & Franceys, 2001)

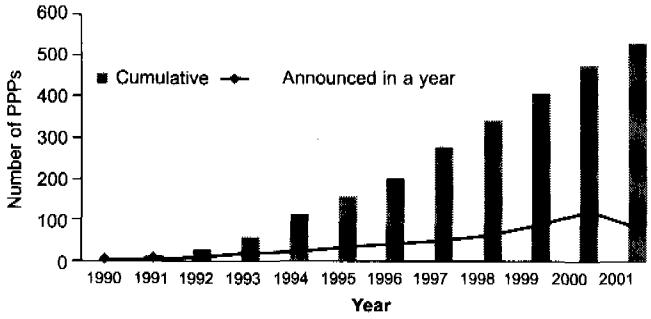


Figure 3: Population served by PPP schemes from 1999 to March 2001 (Nickson & Franceys, 2001)

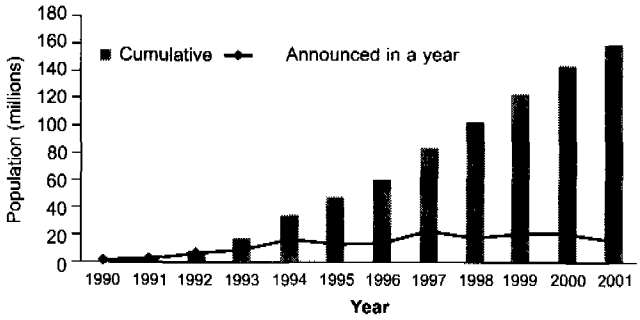


Table 1: Annual growth (%) prospects for municipal water management outsourcing markets

	Operation & Maintenance Projects	Design / Build Projects
USA	15-20	20-25
France	2-3	2-3
UK	2-3	2-3
Rest of Europe	5-10	5-10
Asia	>10	>10
Rest of World	>10	>10

Source: OSBC (2001b)

Figure 4: Revenue share of top ten investor-owned water companies from France, UK and USA (adopted from (OSBC, 2001b))

Figure 5: Water sales from some international operators (Hall, 2001)

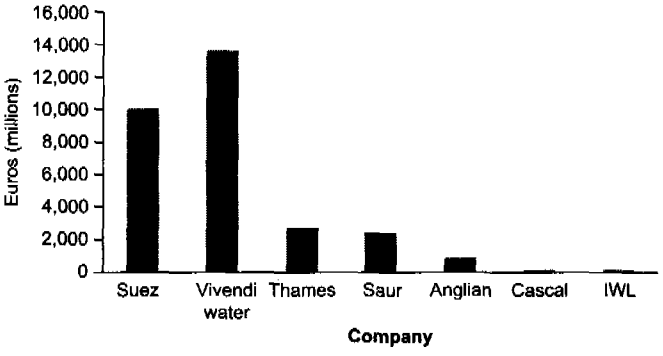
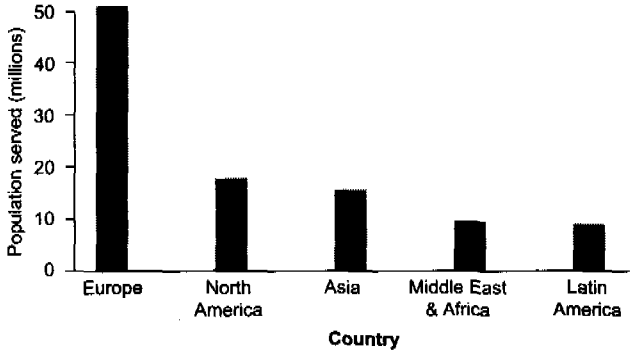


Figure 6: Population covered by Vivendi Water (adopted from Gleick et al, 2001)



These multinationals largely focus on either developed countries or large cities in the developing world. Since profit margin is low and risks are high, there is a degree of reluctance from these companies in actively extending their networks to developing countries. The French multinational SUEZ recently announced a five point 'action plan' for 2003-2004 (SUEZ, 2003 and Hall, 2003). The five points are:

Table 2: Population served by SUEZ

Region	Population catered (millions)	
	Water	Wastewater
Europe and Mediterranean	39	32
Asia-Pacific	23.5	4
South America	24	17
North America	9.5	9
Africa	8	8

Source: http://www.suez.fr/metiers/english/index.htm

- Reduction of debt, mainly by selling existing assets;
- Cost reduction;
- New investments to be financed from cash flow, so new annual investments fall from £8 billion to £4 billion;
- Reorganisation, including merging water and waste management into a public sector division and a private sector division;
- Reducing its exposure in developing countries by one third.

There is also a significant number of small-scale formal and informal suppliers of water in developing countries, particularly in Africa. They obtain water from large suppliers and sell it on to households. Private operators are particularly involved in retail sales, downstream from the State-owned enterprise (public or private), which in theory has a monopoly on water production and distribution (Collignon, 1999). Some typical characteristics of these vendors are shown in Table 3. They play a significant role in small towns and areas without networks.

Table 3: Typical characteristics of small-scale water suppliers in Africa

Type of supplier	Principal occupation	Sector (formal/informal)	Weekly earnings (US$)
Street peddler	Retail water sales (bottle, glass)	Informal	2-5
Water carrier	Home sales	Informal	6-15
Water trucks	Transport & delivery of water to homes	Formal /Informal	300-600
Fountain manager	Water sales by bottles or gerrycan	Formal	10-70
Tank owner	Water sales by gerrycan	Informal	20-70

Source: Collignon (1999).

Issues

Whilst privatisation measures are being widely promoted and adopted, certain issues and associated risks to the water sector require investigation broadly under six headings:

- Higher Water Charges and inequalities;
- Public subsidies, loan guarantees and shift in risk transfer;
- Ease of access to connections;
- Transparency;
- Contract deficiencies;
- Water as a social good.

Higher Water Charges and inequalities

Most private operators invest resources in the water sector on the basis of the 'full cost recovery' principle. This essentially transfers the full payment burden to consumers unless a system of appropriate and justified subsidies is put in place. The general perception of privatisation is that it helps to ease water charges. Experience, both in the developed and the developing world, is that this is not always the case. For example, in France where public, public-private and private operators supply water services, the public operators' tariffs are about 12% less than the other models (Table 4). In England and Wales, where the water industry was privatised in 1989, average household water charges have increased by 20%.

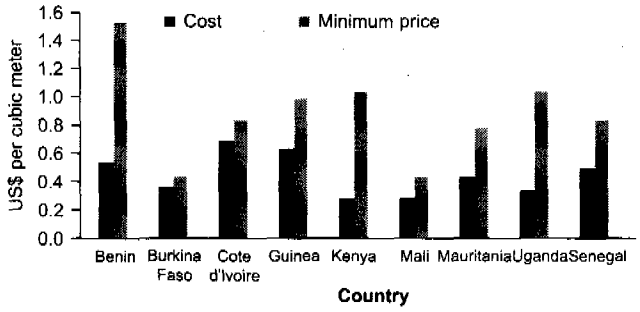
Table 4: Average prices (in FF) for yearly consumption of 120 m^3, water supply and sanitation

Management type		1994	1995	1996	1997	1998	1999
Public	Municipal/Régies	1,489	1,621	1,716	1,803	1,848	1,841
Private	Delegated/Private	1,784	1,908	1,993	2,050	2,100	2,100
PPP	Public-Private Joint Venture	1,734	1,812	1,963	2,014	2,076	2,101
Average	Average all modes	1,689	1,799	1,910	1,974	2,015	2,049

Source: Hall (2001)

Even in the developed world, bad debt is causing an additional increase in water and sewerage charges for those who pay their bills. For example, currently over 4.4 million UK households are in arrears and three in 100 never pay at all, causing bad debts of £130 million a year

Figure 7: Cost and minimum price charged by standpipe vendors in some African countries (Collignon & Vézin, 2000)



(The Guardian, 2002). The issue is complex and has links with affordability, particularly in regions where water and sewerage charges are high (WICS, 2001). The problem has been recognised, to a certain extent, and one potential solution is the establishment of trust funds. For example, Anglian Water (AW), a water company in England, has set up the AW Trust Fund as an independent body governed by a board of trustees. The fund is officially registered trust and gives grants to customers in the AW area who are in financial hardship. It is financed by donations from AW of around £ 2 million per year. However, the take up rate from these funds is low, for whatever reason, meaning only limited numbers of vulnerable customers benefit.

In many cities in developing countries, the wealthy (who can afford to pay) receive piped water at low cost, while the poor (who can least afford it) must rely on unsafe water at very high cost. In Luanda, where recipients of piped water pay less than a cent per cubic metre for example, people without connections may pay as much as US$ 16.00 per cubic metre for untreated water delivered by tanker (Brook, 1997).

This is not an isolated case as Figure 7 illustrates. Even cities with consumption related differential tariff structures do not always favour the majority of low-income consumers (Collignon and Vézina, 2000).

Public subsidies, loan guarantees and shift in risk transfer

In order to attract the private sector, governments offer subsidies as routine practice and even international financiers (e.g. World Bank) persuade governments to

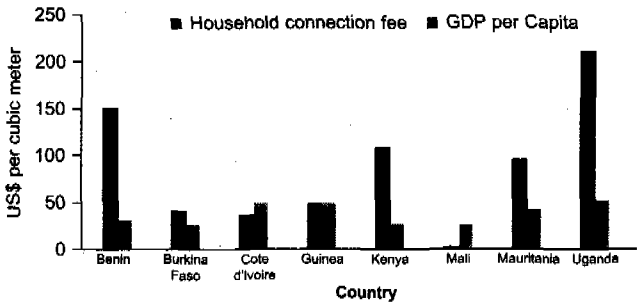
provide loan guarantees to secure investment and profits. In the absence of appropriate contractual mechanisms, the risks to inefficient water companies are minimised and transferred back to the public exchequer.

Cross-subsidies for multinationals are another issue potentially working against relief to consumers (e.g. reduced water bills). Currently, there are insufficient mechanisms available to prevent multinationals from transferring profits earned from the water sector to others (e.g. communications etc). Some of the biggest private sector operators have exploited this situation and used water as a tool to subsidise other operations. Specific examples are given by Hall (2001).

Ease of access to connections

Over the last decade, particularly in developing countries, it is clear that private water companies tend to capture water markets in urban areas where consumer can afford water charges. In other words, low-income groups and peri-urban areas have been excluded (ignored) or underserved. This situation comes about due to high connection fees. Figure 8 shows the level of water connection fee in relation to consumers' affordability in some African countries. Although in concession contracts, public bodies put special emphasis on improving access to networked supply, clear responsibility delegation and reinforcing mechanisms, in most instances, have been found missing. However, there are some good examples too where private multi-national operators have increased connections to the poor where concessions are appropriately structured. 400,000 lower income consumers in Manila and 260,000 in Buenos Aires have benefited from various approaches providing affordable connection charges (Nickson and Franceys, 2001).

Figure 8: Water connection fee and per capita GDP in some African countries (Collignon & Vézina, 2000)



Transparency

Free flow of information helps to maintain checks and balances. With few exceptions, the privatisation experience, particularly in developing countries, has shown an alarmingly consistent pattern whereby the process in which concessions and contracts are granted does not facilitate the free flow of information between all stakeholders. In many countries (e.g. Hungry, Jordan, South Africa and even France), concession licenses and contracts are kept confidential. This raises doubts about the nature of the concessions and the terms under which the private sector operates. Many private partnerships are found lacking in the essential element of consumer participation in decision-making, which itself is a vital instrument to enhance transparency. Due to the lack of strong regulations, several convictions have also been reported for the use 'kickbacks' and government officials receiving bribes (Hall, 2001).

Of course, there are examples of good practice. For example, in England and Wales, all licensing agreements must remain in the public domain and can be freely accessed through the Office of Water Services (OFWAT).

Contract deficiencies

A concession, contract or a licence is a legal document, which if not prepared carefully could have major implications and may cause irreversible changes. In most cases, these contracts are not 'pro-poor'. The contracts lack clear provision for eco-system safety, security of supply for downstream users, contract monitoring and dispute settlement procedures, public ownership of water and water rights, providing poor access to networked supply and the rationale behind setting water charges (Gleick *et al.*, 2002).

Concession durations are usually long (e.g. 20 years) or may eventually become indefinite. This effectively reduces the competition regime and deprives consumers a right to choose, therefore, forcing them to take services on terms that may be unreasonable. There have been cases where governments have found it

difficult to terminate or shorten the concession period (Hall, 2001).

Water as a social good

Despite broader appreciation of the fact that provision of water services is an investment intensive task, public perception and moral values tend to favour treating water as a social good. This is further consolidated by the fact that water has a religious dimension (e.g. baptism in Christianity, wadhoo in Islam). This strong emotional affiliation, affordability issues, plus social and political drivers have largely caused opposition and, in some cases, strong public protests against water industry privatisation both in the East and West.

Benefits

Although a somewhat gloomy picture of privatisation has been sketched so far, it would be unjustified to completely right off any private sector involvement. There are examples where the private sector has out-performed the public sector. This has been possible through stringent regulatory and proper monitoring regimes.

Particular mention is made of the fully privatised model of England and Wales. This model operates under the tight monitoring framework of economic, environmental and drinking water quality regulators. The water sector was privatised by the UK Government in 1989 who wrote off £5 billion of the industry's debts and gave it a £1.6 billion cash injection (Ofwat, 1993) as a 'green dowry'. Since then, the industry has invested over £33 billion and currently invests over £3 billion a year. The quality of drinking water and level of customer service rendered is among the best in Europe and probably world over. There is no doubt that this substantial improvement has been funded through increased water bills. At the same time, serious efforts have also been made to increase profit margins through efficiency enhancement initiatives. Table 5 gives a comparison of unit operating expenditure of the private utilities in England & Wales and publicly managed Scottish Water. Despite rising bad debt figures, water companies in the UK are not allowed to disconnect household water supply.

Table 5 Comparison of unit operating expenditure between 1999-2000

	Unit cost per cubic metre (pence)		Unit cost per property (£)	
	England & Wales	Scotland	England & Wales	Scotland
Water	31	39	63.4	91
Sewerage	40	42	51.7	74

Source: WICS (2001)

Guiding principles for privatisation

Although experience suggests that private operators have yet to deliver any substantial relief to water consumers who are on low income and live in countries with weak governments, these same governments have also failed to meet the basic water needs of their poor. Public utilities are therefore desperately in need of some form of internal capacity building and possible restructuring, and controlled privatisation may be a suitable vehicle for this. To do this effectively, some basic principles require incorporation into the policy decision-making process and Gleick *et al.* (2002) and others have identified several which are particularly important.

Continue to manage water as a social good

Governments should put considerable effort into guaranteeing the supply of wholesome quality water at least in quantities that are sufficient for human needs and to ensuring that the needs of downstream water users and the environment are properly catered for. The first priority should be to strengthen public utilities and maintain public ownership of water resources and infrastructure whether or not the private sector becomes involved.

Use economics in water management

When considering privatisation, great care is needed to ensure that the water charging mechanism is based on a sound rationale and tariffs are reasonable and fair across all community sections. Any upward tariff adjustments must be linked with agreed improvement in services. Over-subsidised systems often fail and are less resilient to risks. Therefore, subsidies should be provided only where absolutely necessary and must be economically and

socially sound. Cost-benefit analysis should be performed for any new water resource development project to make sure that other water efficiency options (e.g. leakage management, recycling etc) are explored and implemented in preference to major capital investments that have to be repaid, possibly by increased tariffs.

Maintain strong government control and monitoring

Regulators must be strong and equipped with capabilities to seek the effective enforcement of the conditions set out in privatisation contracts. They should be resilient enough to withstand tempting offers and influences from politicians and private sector operators.

Prepare effective contracts

Contracts must protect the public interest; this requires provisions ensuring the quality of services, tariff adjustment mechanisms and a regulatory regime that is transparent, accessible and accountable to the public. Independent technical assistance and contract review should be made standard practice. Privatisation contracts should explicitly mention performance indicators that are meaningful and cost-effective to monitor. Penalty clauses should be balanced by rewards to the private sector for outstanding work. Negotiations over privatisation contracts should be open, transparent, and include all affected stakeholders. Careful provisions must be made to deal with unexpected events over the life of the contract. Clear dispute resolution procedures should be developed before privatisation (Brook, 1997).

Unless a balanced approach between commercial and political realities on the one hand and community well being on the other is observed, these guiding principles may provide little attraction to the private sector. This negative impact will be particularly intense in areas where water management is already in disarray due to lack of infrastructure, regulatory instability and increasing poverty. The World Bank (Brook, 1997) suggests various options that may increase the attractiveness of particular schemes to private operators:

Stepwise transformation: Instead of rushing to extensive privatisation, countries may, as a first step, introduce management contracts. This allows limited private sector involvement while allowing the government to address tariff, regulatory or information problems in the sector. Governments, based on their experience, may then gradually progress to further privatisation.

Simplifying contracts: Although contract preparation is the most important part of the privatisation process, it does not need to be overly complicated. In countries with limited administrative capacity, simplifying contracts can do much to simplify monitoring and reduce uncertainty. One of the attractions of management contracts is that in, principle, they need not require the kind of regulatory and monitoring infrastructure required by long-term concessions. However, for maximum improvements under management contracts, it is important to put meaningful performance indicators in place coupled with a robust, cost-effective monitoring mechanism.

Contracting out parts of the regulatory function: In many countries, there is no tradition of creating independent regulatory agencies. Governments often have very little administrative capacity and regulatory experience. As a result, some countries (e.g. Angola, the Philippines) are considering contracting out parts of the regulatory function such as collection, processing and auditing data on water companies' performance. Contracting out these time consuming tasks necessary to carry out the regulatory functions can significantly reduce a government's administrative burden. It can also increase the credibility of the regulatory process if the auditing company has a strong reputation for quality and integrity.

Conclusions

It seems the future holds an increasing place for the private sector in water management. Although our limited experience of privatisation initiatives so far suggests the private sector is 'cherry picking' and has failed to drive down water prices and provide access to quality services

to low-income consumers, it has certainly opened a window of opportunity to explore other possible means to manage the water sector.

The increased involvement of private operators should most effectively yield results if the process of preparing, awarding and monitoring privatisation contracts is made effective and transparent through a clearly defined framework to delegate responsibility and ensure accountability. Strong interaction and information flow between the water suppliers and consumers is a useful trust building tool. Developing administrative capacity and technical capability for establishing strong regulators must also be seen as an essential part of future privatisation policies.

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