'The role of the Non-State sector in Urban Water Supply'

by

Andrew Nickson
International Development Department (IDD)
The University of Birmingham, England

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Andrew Nickson
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Introduction

It is the role of government to ensure adequate water to all because water is a good with considerable positive externalities, namely a service that brings wider public health benefits to society as a whole. Although its is a private good, the historical justification for direct public sector involvement in its supply has been to ensure these wider benefits, particularly for the poorest. This was based on the assumption that the private sector would be uninterested in serving those who are less able to pay. It is feared that in a pure market situation households would only purchase what they believe they need for convenience (rarely for health) and would not purchase enough to achieve health benefits and that they would then be tempted to dispose of the waste in a manner that fails to benefit society as a whole. Consequently, the 'merit good' argument emphasises that it is the role of government to ensure the adequate provision of public health services to all, with a particular focus on the needs of the poor because the benefits to wider society of ensuring basic provision here will be greatest.

However, the publicly-operated water sector in low and middle-income countries is failing to meet the needs of the urban poor. Instead it has ended up subsidising the convenience interests of the rich. One of the most glaring failures in government attempts at service provision around the world is the shortage of water faced every day by the urban poor. According to WHO/UNICEF data, 171 million people have no access to affordable clean water in urban areas of Africa, Asia and Latin America. The figures for 'service coverage', the main indicator of reasonable access to this basic need, show an increase of 50 per cent over the past decade in those not served with urban water supply (WHO 2000). Governments have generally been unable to limit staffing levels and to motivate personnel, thus failing to ensure efficiency. They have also maintained tariffs so low that they rarely generate sufficient funds for routine operation and maintenance, let alone extension of the pipe network for the benefit of the urban poor. For these reasons, there is growing interest in the role that the non-State sector might play where the state has so obviously failed.

This paper addresses nine topics and related issues that are associated with the challenge to public policy-makers of promoting an effective role for the non-State sector in the provision of water for the urban poor in low and

middle-income countries.[1] It should be noted at the outset that the 'non-State' sector in urban water supply (UWS) consists of two very different sub-sectors. On the one hand, there are the global transnational corporations (e.g. Ondeo, Vivendi, Saur, RWE) that have penetrated this market to a much higher degree than has been the case for other public services such as health and social housing. On the other hand are the community groups and private water vendors (PWVs), small-scale enterprises that often provide water for the poorest of the urban poor whose households are not connected to the pipe network.

Topic 1: How can political support be generated for involving the non-state sector in service delivery?

The urban water supply sector in many low and middle-income countries is snared in a 'low-level equilibrium' trap - in which the vested interests of powerful producer stakeholders (politicians, trade unions and engineers) predominate. By contrast, the primary stakeholders in a government supported urban water supply reform programme should be the poor consumers who stand to benefit most from the 'merit' good of water. However, producer interests have come to dominate at the expense of consumers in general, and at the expense of the urban poor in particular. The restraining forces, namely the vested interests of the existing producer-dominated system, usually outweigh the more limited forces of the proponents of change, whether they are national 'change champions' or external donors and financiers.

When considering the necessary capacity to change, it is important to make the distinction between those reforms that become matters of wide public debate and citizen mobilisation and those that generate responses largely from within the bureaucratic arena (Batley 1998). The act of separating out the direct and indirect provider roles by the establishment of a formal regulator, located between government policy makers and the direct provider, falls firmly into the latter category. However technically competent or politically useful in its role of tariff setting, a regulatory body in itself is insufficient to deliver the necessary institutional breakthrough for sustained improvement in performance.

A much more significant and public challenge is required in order to provoke reform of the organisational structure. It is the capacity to mount such a challenge, often initially responded to as a threat, which is critical to delivering change and achieving a breakthrough. In recent years, this capacity has invariably come from the introduction of a private direct provider, especially an international private operator, into the urban water supply system. A crucial impact of the introduction of an international private operator is this capacity to stir up public debate about the quality of service, unfreezing the existing

[1] *Possible areas for preparation work to support the WDR 2003 on the Role of the non State Sector in Service Delivery*, Annex B of Terms of Reference For A Seminar In Support of the Preparation of the 2003/4 World Development Report (WDR), Governance Department and Health and Population Division, DFID, July 2002.

situation, whilst at the same time moderating the impact of the restraining forces.

Hence, the ability to deliver affordable water to all does not depend so much upon the existence of an ideal institutional model, public or private, but on the willingness to use any means to challenge the existing pattern, particularly of pricing and subsidies. Indeed, the inherent or potential capacity of individuals working in an appropriate institutional framework in any country to deliver improved services is assured and relatively constant. There are many cases of so-called 'failing' staff in the water sector liberated and re-enabled with such a change of management. The real question concerns the capacity to successfully promote change by challenging and defeating the 'restraining forces.'

Releasing the capacity to change in this institutional context requires a 'trigger' or driver - some form of crisis - that goes beyond the vague desire of top government officials or politicians to reform and improve services. One such trigger is the veiled threat to some countries by the World Bank that it will no longer lend to the water sector unless the government introduces significant private sector participation. This forthright external stance then provides a lever that national change champions may use in order to unfreeze the prevailing 'low level equilibrium trap'. The surprise convening of a 'Water Crisis Conference' by the Philippine president is another trigger that opened the door to the Manila concession contracts. By 'creating' the crisis the president created the mindset that could overcome the early resisters to change and so enable the reform process to build up momentum. By contrast, despite many years of discussion, the absence of such capacity for promoting change has meant that implementation of sector reform in many low and middle-income countries continues to proceed at a snail's pace (Nickson 1999).

In order to ensure that the reform process is sustainable, the necessary on-going capacity is required thereafter to keep the 'restraining forces' at bay. The private sector, as a form of competition to the public sector model, must be allowed to make a reasonable start to the process of management reform in order to demonstrate whether or not it can really deliver sustainable benefits in urban water supply. The fact that many of the private operators are international is an important capacity strength in this regard. They possess the potential to access additional 'promoters' of change (whether through ambassadorial meetings with heads of state or through access to international financial institutions such as the World Bank) in order to challenge the restraining forces that threaten to derail the reform process

Topic 2: What kind of policy framework is needed to redefine the role of the state in service provision and to encourage non-state provision of public services?

In response to the problems created by the producer-driven institutional arrangement referred to above, a growing consensus for reform of UWS has emerged in recent years among international financial institutions. This derived

from two major international conferences - the International Conference on Water and the Environment (Dublin) and the United Nations Conference on Environment and Development (the 'Rio Conference') - both of which were held in 1992. The new consensus subsequently appeared in policy statements by the World Bank (in 1993) and the OECD (in 1994). At the core of this reform consensus are two fundamental principles:

- *the institutional principle* - that water management should be based on a participatory approach involving users, planners and policy-makers at all levels, with decision-making taken at the lowest appropriate level according to the concept of subsidiarity

- *the instrument principle* - that water has an economic value in all its competing uses and should be recognised as an economic good. Managing water as an economic good is an important way of achieving efficient and equitable use, and of encouraging conservation and protection of water resources. An important corollary is that water companies should be treated as commercial enterprises

This new focus on demand management in UWS arising from the reform consensus necessarily involves a greater role for market forces and thus opens the door to greater private sector participation in the sector. Basic economic principles suggest that water should be charged, not simply on a cost-recovery basis, but according to its long-run marginal cost (LRMC) of supply (i.e. operations and maintenance plus capital charges sufficient to cover new investment to replace and extend the pipe network), suitably adjusted to incorporate environmental costs and benefits.

Marginal cost pricing usually implies higher tariffs because urban water utilities have historically always utilised the nearest and cheapest water sources. For many years such a pricing policy was considered to be beyond the means of low-income residents of urban areas in the developing world. But this does not mean that the poor are unwilling to pay a reasonable amount for potable water as the application of the contingent valuation method for determining 'willingness to pay' (WTP) for piped water has shown. WTP studies reveal that the urban poor are prepared to pay in excess of the previously considered 'affordability limit' of 5 per cent of household income (Whittington et al. 1991). However, this preparedness to pay *'in extremis'* does not mean that the poor want to pay such a high proportion of their income. The drive to recognise the economic value of water should not unfairly penalise the lowest income consumers who receive the poorest service. Hence there is a strong argument for a progressive tariff structure, given the fact that the LRMC usually exceeds the long-run average cost of supply.

Metering is another prerequisite for the volumetric charging that is implied by such an active pricing policy designed to achieve financial self-sufficiency. In fact an influential study of water utilities in Asia concluded that demand management could not be introduced effectively so long as the consumer system is not fully and accurately metered. It recommended that the reduction in 'unaccounted for water' (UAW) through metering must be considered as a

crucial complementary process to the implementation of demand management (Asian Development Bank 1993).

But the most crucial constraint holding back the improvement of utility performance has been institutional. Until recently such utilities in most countries were operated directly by the public sector, as was the case with other basic services such as electricity and telecom. In many counties one explanation for this situation has been the alleged lack of professional capacity in the private sector. Another has been the strong belief that private contractors cannot be trusted to operate UWS without abusing its natural monopoly, externalities and merit good characteristics. Hence, a 'second-rate' government service has been tacitly preferred over what has been presumed to be a third rate alternative – a private contractor regulated only by corrupt politicians.

Yet, in practice, many state-run water utilities by themselves continue to provide only a third rate service. Usually they do not have the power to set tariffs. Instead the sector has long been financially supported by central government transfers. Hence government-set tariffs have not had to reflect the full cost of service provision. Given this history of heavy tariff subsidisation, governments have been unwilling to authorise tariff increases inspired by LRMC. As a result, international financial institutions and governments alike are now increasingly exploring new institutional arrangements in their search for economic efficiency and investment finance in UWS. The emerging policy framework has been heavily influenced by the so-called New Public Management (NPM).

Under the NPM, the reassignment of roles to the actors in the process of service delivery (different levels of government and field administration, the private sector, and the not-for-profit sector) is based on both principal-agent theory and the New Institutional Economics. This involves a split between the purchaser (the central ministry) and the providers (the rest), which is driven primarily by the effort to capture gains in economic efficiency, equity and effectiveness.

In the case of urban water supply, the central ministry or municipality switches from its former direct provider role into a new role as strategic director of the whole sector through its ability to 'purchase' service from other providers. Three new strategic concerns are paramount. First, there is the concern for operational and financial efficiency through the introduction of a range of operational ratios and accounting indicators. Second is the concern for effectiveness through monitoring of water availability and water quality. Third, there is the concern for equity through the monitoring of the expansion of service coverage. Meanwhile, the providers, including sub-national levels of government, de-concentrated units of the central ministry, private operators and not-for-profit bodies, assume a new role in administrating various aspects of the delivery of water services on behalf of central government, to which they are held accountable (Nickson 1999). A range of organisational reforms arising from the introduction of the NPM in the sector is show in Table 1.

Table 1: The relationship between the New Public Management

and reform of the urban water supply sector

Building blocks of NPM	Related NPM policies	Manifestation in the urban water supply sector
Responsibility**:** ensure clarity of goals and purpose	Separate policy-making from service delivery functions Shift locus of controls to lower level managers Use contracts and performance agreements to promote transparency	Split of policy-making and service delivery roles Bureaucratic commercialisation: decentralisation and autonomous state water companies Contracting and service agreements
Accountability**:** increase accountability of managers to customers	Promote client choice Develop customer charters	Toleration of private water vendors Establish water customer committees
Performance**:** create stronger incentives for good performance	Link reward to performance Strengthen feedback mechanisms Stimulate competition	Lease and concession contract arrangement Establish independent regulatory body Promote international bidding for contracts

Topic 3*: *How have the boundaries between the state and non-state service providers been defined in practice to ensure an optimal mix for effective and equitable service delivery?

The failure of institutional reform within the public sector provides the background to the growing introduction of private sector participation in urban water supply around the world. The factors responsible for this trend may be divided into two broad groups – factors internal to the provider and the interests of external stakeholders. There are four main factors internal to the provider that have encouraged the growing interest in private sector participation in urban water supply – the shortage of new investment resources, the wish to depoliticise payment for water, the pressure to avoid patronage, and the need to reduce personnel costs. In addition to factors internal to the water utility providers themselves, pressure has come from three major external stakeholders - central government, international financial institutions and international water companies.

The argument for private sector participation in the direct provision of urban water supply can be examined through its contribution towards meeting the

three major public policy concerns - efficiency, effectiveness and equity. First, the efficiency argument states that private sector involvement can potentially improve the operational and financial efficiency by introducing tariff systems that are based on volumetric and cost-reflective charging, or by reducing costs through a more flexible personnel policy that avoids overstaffing. The related fiscal argument states that it can also improve the overall fiscal balance of the public sector, in one or more of the following ways: by reducing subsidies to loss-making water utilities; by increasing tax revenue through expanding the role of the private sector; and by reducing the government borrowing requirement through private sector financing of capital expenditure.

Second, the effectiveness argument states that private sector participation can improve the effectiveness of urban water systems by improving water availability, water quality and consumer satisfaction in general. First, the more cost-conscious management approach of the private sector will give greater priority to network maintenance, generating effectiveness dividends in the form of reduced leakage rates and better filtration systems. Second, the more consumer-oriented approach of the private sector will give greater priority to consumer standards and customer care, generating effectiveness dividends in the form of a reduced number of complaints over billing, cut-offs and turbidity.

Third, the equity argument states that private sector participation can improve the equity of urban water systems by introducing full cost-recovery pricing to existing high-income households that are already linked to the network. The removal of such subsidies can then generate revenue for network expansion to low-income households in peri-urban areas. This expansion of the distribution network leads to lower absolute water costs for the urban poor who were previously dependent on high-cost supply from private water vendors.

There are eight major institutional arrangements that involve non-state actors in urban water supply - the service contract, the management contract, the lease contract, the build-operate-transfer contract, the concession contract, the joint venture, the co-operative arrangement and divestiture. Of these, the concession contract has become by far the most common institutional arrangement for involving private sector participation (Nickson 1997).

Table 2: Global impact of new institutional arrangements for UWS

Institutional arrangement with role for non-State sector	Global take-up	Geographical focus
Service contract	Medium	All regions
Management contract	High	Especially Sub-Saharan Africa
Lease contract	High	All regions
BOT contract	Low	East Asia
Concession contract	Very high	Latin America, East Asia
Joint venture	Low	Francophone Africa, Latin America
Co-operative	Extremely low	Only Bolivia

Divestiture to private sector	Extremely low	Only England and Chile

Topic 4: What are the most effective institutional mechanisms for encouraging service delivery by non-state providers?

The concession model has expanded rapidly during the 1990s and is now the most common institutional arrangement for involving the non-State sector in urban water supply (Table 2). It has all the characteristics of the lease contract, but with the significant addition that in addition to operation (i.e. abstraction, treatment, distribution and sale of water) and maintenance, the concessionaire also finances an investment programme for expansion and/or rehabilitation of the urban water supply system. In some cities (e.g. Mexico City, Manila), the geographical area is split between several concessionaires to promote comparative competition. Customers are billed directly by the concessionaire, which normally retains the whole revenue stream in order to finance operating costs, as well as depreciation of new investment and debt service payments. The proposed consumer tariff levels and royalty payments to the public body for water abstraction and transmission are key variables in the competitive bidding process. The contract period is long (20-35 years), at the expiry of which the installations are handed over to the public utility unless the contract is renewed.
In order to earn an acceptable rate of return commensurate with the risk, the concessionaire must offset the expenses incurred by ensuring an adequate flow of revenue, accurate billing and collection from all customers, at tariff levels agreed with the indirect provider, namely the state.

The goal of this institutional arrangement is twofold: that existing customers should receive a significantly better quality service and to achieve universal service coverage, by including citizens previously unconnected to the pipe network. After receiving a household connection, this latter group is likely to pay a significantly lower price than what they paid before to private water vendors (PWVs). Asking private operators to bid for the contract according to their ability to reduce prices appears to be a powerful tool to achieve early efficiency gains, which is one of the prime advantages of involving the private sector. However, reducing prices in a system that will almost certainly require significant investment for many years to come can delay quality improvements and can send the wrong message to customers about the need for conservation of a scarce resource. Therefore an alternative approach to bidding relies on maintaining existing prices and requiring operators to compete on the number of new connections (eg. La Paz – El Alto in Bolivia).

Concessions are attractive to governments as they promise to deliver an all-embracing solution to what has apparently been an insoluble problem. They appear to transfer all responsibility for direct provision of water to the private operator through an institutional arrangement that delivers an efficient, least cost, supply along with the necessary finance to achieve effective service delivery, whilst ensuring a cost-effective tariff. These are objectives that have been beyond the capacity of government to deliver as direct provider.

But concessions pose a threat to government because of the public perception that water has been 'privatised'. This is generally regarded as an unpopular concept when so many people resent the idea of anybody deriving profit from the supply of such a 'basic need'. Consequently governments have to take a considerable risk that such a dramatic change will in practice deliver the promised benefits, without too many unexpected political costs. The requirement for experienced international operators to be involved is one way of minimising that risk but there is a danger for any government of using up scarce 'political capital' for the introduction of a new institutional arrangement whose benefits are necessarily unproven. The recent failure of the Cochabamba concession in Bolivia received widespread media coverage (Nickson and Vargas 2002). Nevertheless, the outcomes from introducing concessions in major metropolitan cities around the world to date have generally been positive.

Because of this perceived political risk, there is a strong temptation to choose an alternative institutional arrangement such as the BOT contract for bulk water supply because it involves no direct interface with customers, who therefore remain relatively unaware of any private sector involvement. But for most government direct providers the main problem is not fixed asset construction, but that of acting as product retailer, which involves face-to-face relations with customers through providing a quality product with good service at a fair price. Handing over the heavy engineering tasks to the private sector through BOTs in order to meet short term financing problems rarely provides a solution to this problem. In any case, private sector consulting design engineers and construction companies are already involved in these activities and governments can borrow for such straightforward tasks more cheaply than private companies. Turnkey contracts are the solution to public sector design and construction risk, with performance guarantees and operating contracts available for ongoing operations. Furthermore, the BOT approach carries its own risk - that the guaranteed cash flow promised by government to pay for bulk supply or treatment may not be delivered to the private sector producer and wholesaler by the government acting as retailer. As retailer, government agencies may allow too much of their product to be wasted en route to the customer through leakage and illegal connections or may fail to bill customers adequately and fail to collect those bills that are delivered.

If a concession is too great a step and a BOT has so many limitations, a lease contract may appear more acceptable. But almost all water supply systems need large-scale investment to overcome decades of under-investment. Hence even lease contracts are tending towards 'enhanced leases' whereby the private operator is responsible for some level of investment in rehabilitation or extension of the distribution system to peri-urban areas. Another possible option is to negotiate BOTs for treatment processes, lease contracts for distribution, and separate service contracts for customer operations such as metering, billing and collection. However, the possible benefits from contracting out each element of the process to private companies is likely to be outweighed by the higher transaction costs of vertical disintegration. The technical, economic and administrative capacity

that government needs in order to manage the various contracts is considerable.

Therefore there is a strong argument in favour of combining operating and capital investment responsibilities in a comprehensive concession contract. Water supply systems require large-scale capital investment in fixed assets with a very long lifespan. As a result, fixed costs are a very high share of overall costs. The efficient operation of these systems depends upon optimising the balance between expenditure on fixed assets and operating costs. Some level of integration is necessary to deliver the most effective balance between the two in order to achieve the lowest prices. Transferring the responsibility and risk to a single entity to achieve that optimisation is likely to produce better results (Franceys and Nickson 2003).

Topic 5: How can middle income and developing countries build capacity for overseeing and regulating non-state service providers?

The goal of private companies that operate concession contracts is to maximise the financial return to their shareholders. However, these companies may be tempted to abuse their monopoly position in order to increase their profit margin. So concession arrangements require strong regulation of prices, service quality, drinking water quality, environmental quality and customer care. The purpose of separating the indirect provider role from that of the direct provider role was to introduce clarity of objectives into the role of government. This clarity can best be achieved by further separating out the regulatory task from that of developing overall policy for the water sector, including legislation, contract preparation and negotiation. Governments have found little difficulty in developing capacity in the areas of policy and legislation and, where required, have augmented their capacity by hiring consultants to draw up contracts. By contrast, governments have found it much harder to develop capacity in regulation.

The regulatory process needs an independent view on the economic cost of achieving the political goals of service coverage and environmental protection. It needs independent monitoring of performance indicators to judge success or failure that is not overly tied in to the interests of the policy making function of government. Regulation necessarily means coping with rapidly changing situations where there are many variables and few clear rules. The ability to make the appropriate regulatory decision therefore requires considerable autonomy from ministerial control in order to act with the necessary flexibility and discretion.

In spite of the benefits of such separation of tasks in order to promote efficiency and transparency, it is rarely possible to achieve this goal. In fact, government and politicians often become involved in regulatory decision-making, to the frustration of the regulator. In high-income countries, other forces in society, such as the media, NGOs, consumer associations and academics, tend to act as a buffer, shielding regulatory bodies from overdue interference from government. At the same time these forces act as a prod, promoting action by the regulator when it is seen to be slow in coming. This

critical role of civil society has to be encouraged if the regulatory model is to adapt successfully in low and middle-income countries and the temptation for government to interfere constantly in day-to-day management issues is to be successfully resisted.

The regulatory task of adjusting and adjudication in a constantly changing political and socio-economic environment is a major challenge for any government agency. If government has found it difficult to undertake the relatively straightforward task of providing water then it will struggle even more with the task of regulating a global private water operator. Achievement of this task requires well-paid, independent professionals in a government agency that is endowed with the necessary autonomy to develop its expertise over a number of years. Ironically, these are the same organisational characteristics that would have served government well in its role as direct water provider but which were rarely on offer. In some countries the regulatory body has been staffed with engineers transferred from the former state water provider. They often lack the necessary skills in accounting and economics and experience of the new tasks of regulation. Furthermore, they often resent the new private management taking over their former institution.

The regulator is normally responsible for five basic activities: licensing operators (and amending licences when necessary), price-setting to ensure adequate financing, performance monitoring, adjudication (judging between competing interpretations of contract expectations), and imposing any sanctions for non-compliance. Some of these activities may not necessarily have to be undertaken directly by government officials. International accounting consultants may be contracted to audit the accounts of private operators, but using international auditing standards rather than the less stringent locally adapted standards that have tended to be used in the past.

The key criteria for successful regulation have been described by one researcher as: a clear mandate with specified duties and powers; the autonomy to take decisions; accountability with mechanisms for arbitration; transparency and openness to scrutiny; stability and consistency; professionalism with status and respect; and objectivity that is focussed and non-partisan (Stanley 2001). These are general characteristics of governance that are often severely lacking in low and middle-income countries. Hence the development of effective regulation is a challenge to the behaviour of government in a wider sense than that of the water sector alone.

The multi-faceted nature of the regulatory process requires professionals with the mindset of an economist or accountant who also understand the role of management, the market for private services, the engineering foundation of the water business, the legal framework, and the politics and sociology of development, together with communication and inter-personal skills. Unfortunately, in many developing countries this sort of person with an independent frame of mind will usually have the potential to earn far more in the private sector or in an international organisation. A common alternative to overcoming this scarcity is to appoint a senior civil servant, supposedly imbued with most of these skills, but in practice often lacking appreciation of

the role of the market and with a tendency, based on career experience, to look to the ministerial view.

Given that political interference by governments bears much of the blame for the failure of the urban water supply sector in the past, is it realistic to expect governments not to abuse their power over their own regulatory bodies? One solution advocated to avoid such potential abuse is to use the contract as the basis for all adjudication of disputes. Concession contracts contain detailed specifications for determining network expansion, water price and water quality. Yet no written agreement can foresee everything that might happen over the long 20-30 year lifetime of a contract. For the new form of 'arms length' water provision there appears to be no alternative to a regulator to monitor, interpret and adjudicate on the effects of changes in circumstances.

Government faces three major strategic decisions regarding the regulatory format. First, it must decide whether to have a single national water regulator or to decentralise this responsibility to state, province or even municipal level. Second, it must decide whether to have separate regulatory bodies for each sector, each one focussed upon a single utility service such as water, or whether to have a multi-sector regulatory body with a remit that includes, for example, electricity and gas as well as water. Third, it must decide whether to have separate regulatory bodies for economic regulation and environmental and quality regulation, or to fuse these concerns in a single regulatory institution. One proposal to resolve these issues is the establishment of a 'Coordinating Regulatory Agency'. This would be a central body from which local regulators could access expertise and advice, information flows, a discussion forum, research services, support and consultancy, and training. It would not have an executive role but would be a source of support to all regulatory agencies in the country (Stanley 2001). A related question is whether there should be an individual regulator with the impressive list of personal attributes described above or a multi-member regulatory board that can spread the required skills over a number of individuals. For reasons of practicality and transparency, the broad consensus around the world today favours the latter of these two options (n.b. forthcoming shift in OFWAT towards a multi-member approach).

A key concern when making these decisions is to limit the imbalances that can arise when a single regulatory body 'takes on' a single utility. This is particularly relevant when the utility is managed by an international private operator with global experience of negotiating with national regulators to its own advantage. In this case, the regulator faces the classic 'principal-agent' problem - the tendency for the principal (i.e. government) never to be sure whether their agent (i.e. contractor), is performing at optimal efficiency and effectiveness. In order to counter the dangers implicit in such a relationship the regulator needs 'comparators' - data from other utilities with which to compare operating efficiency, construction costs and cost of capital across companies.

In this respect, regulatory bodies in low and middle-income countries face a major imbalance in capacity vis-à-vis the companies whose activities they

regulate. In England and Wales the regulator has access to 25 comparators whereas most of those 25 companies have little experience of other incentive based regulators. By contrast, in Buenos Aires it is the private operator (Ondeo) that has considerable access to international regulatory experience whereas the regulatory body, ETOSS, has the experience of only one company to monitor and facilitate. One suggested solution to this problem of capacity imbalance is to hand responsibility for regulation to an international private company. But there would still remain the need for capacity somewhere in government to regulate that regulator. Global initiatives are helping to address this capacity constraint. The World Bank's International Network of Utility Regulators acts as a forum for discussion and information exchange. The Asian Development Bank's has set up an internet-based forum for sharing of utility data in order that regulatory bodies in countries with a very limited range of private operators, and therefore limited national comparators, may have access to international comparators.

Another proposal designed to 'level the playing-field' by reducing the asymmetry in information between the regulatory body and the private operator is to use 'open-book accounting'. Under this arrangement, the private operator not only has to supply regular financial statements to the regulator but these accounts are open at any time for inspection and investigation to determine the 'true' level of costs. This approach has already become best practice in 'partnering agreements' between private companies as well as for some government contracts in high-income countries.

Regulation involves the near impossible task of 'holding the ring' between government on one side and the private operator on the other. To make matters worse, this is often tantamount to holding the ring between the forces promoting change and those forces restraining change. The regulator has to become the 'impartial referee', without, of course, becoming a 'punch bag' in the middle, pummelled by all sides. Whether there is the capacity to sustain these tasks over the long term, tasks that are more sophisticated than operating a direct water provider efficiently, is generally unproven, given the limited experience of regulation to date in most countries (Franceys and Nickson 2003).

Topic 6: What are the most effective strategies for understanding and channelling the preferences of service recipients and making public services more responsive to demand?

The responsiveness of public services to users depends on two key factors – the representation of customers and organisational design. Customer representation may function as part of the regulatory body or as independent entities, albeit funded through the regulatory system. Customer representative organisations may function at the national level, at regional level and at municipal level. In high-income countries the task of customer representation has become ever more sophisticated. Customer committees in England and Wales have the comprehensive tasks of representing customers' views to government and to the regulator on all aspects of service provision and policy, of auditing the complaints procedures of private operators and of arbitrating

on behalf of the customer in cases of unresolved complaints, often in order to achieve a higher level of compensation.

The availability of early retirement on good pensions has helped to deliver the necessary capacity in England and Wales to staff these voluntary (i.e. unpaid) customer committees. In the very different economic situation of low-income countries, such sources of capacity are much more limited. Instead, the NGO sector must play an important role, both acting independently as quasi-consumer association bodies and by seconding staff with the appropriate personal capacities to serve on any such customer committees.

In all countries customer representation faces the general challenge of avoiding politicisation. There is the additional challenge in low-income countries of ensuring the representation of the poor on customer committees. This is a critical capacity issue where a large proportion of the urban population lives in slums and unplanned housing areas. An effective way has to be found to access the views of the poor before they become customers, at the stage when many of them may still be waiting to become connected to the pipe network. In order for this to happen, community based organisations and NGOs working in such areas need to be incorporated into the regulatory process.

Organisational design is another factor that determines the responsiveness of public services to users. Contingency theory suggests that the most effective organisations are those designed to be contingent upon their socio-economic environment, with particular reference to the size of market and type of technology required. Urban water supply, which involves the provision of a ‘simple’ technology to a ‘mass market’ may be described as requiring a ‘mechanistic’ style of organisation and management, namely one with agreed procedures and relatively fixed rules for all tasks.

The urban poor want a convenient and affordable piped supply and are willing to pay for it. They deserve to achieve the benefits from economies of scale in the form of water quality and quantity that such a municipality-wide, ‘mechanical’ provider can deliver. However, serving the needs of the poor living in informal, unplanned, illegal housing areas cannot be undertaken in a ‘mechanistic’ style because every low-income settlement has different characteristics in terms of income and organisation as well as differing physical characteristics relating to housing density and access lanes.

Because of the significant size of this segment of the market, delivery to the poor needs an ‘organic’ style of organisation, namely one requiring the capacity to be flexible and adaptive. In particular this requires an awareness of social development issues that are critical to enable the poor to benefit from any infrastructure development. Hence in terms of contingency theory what is required is a hybrid organisational style, known as ‘mechanical-organic’ - one that is capable of delivering good quality bulk water as cheaply as possible to poor households but that can then be locally distributed through an ‘organic’, flexible approach. The particular human skills and attitudes that are needed

for such an organisational style are not normally found within the capacity of an engineering-led, 'mechanistic' water utility.

So public-private-NGO-community partnerships are needed that can deliver the required capacity to achieve the 'mechanical-organic' style. Such partnerships include not only private operators but also private NGOs, or their social development consultant equivalents, which view the beneficiary community as partners, acting and deciding together in the provision of clean water and sanitation. This approach requires private operators to demonstrate capacity in a range of activities that they have not previously needed (Franceys and Nickson 2003).

Topic 7: What are the most effective policies and approaches for ensuring affordability and access by the poor to services provided by the private sector?

The challenge to policy-makers in the urban water sector is to meet the expressed needs of the poor for the convenience of household connections in the most cost-effective manner. It is clear from the innovations introduced by some private operators that no sophisticated technology is involved, and that there is nothing that a government utility could not achieve. The case of Durban, South Africa shows that at least one government water utility is developing effective ways to serve the poor (McLeod 2001). But that example is the exception. Instead the challenge appears to be easily ignored by most government direct providers, even though, according to the merit good argument, it is the reason for their being established in the first place.

Meanwhile, the poor still have to obtain water from somewhere, every day. The failure of the formal, government agency providers has been resolved in several ways - by neighbours on-selling water from their household taps, by vendors carrying water from distant standposts or illegal connections, and by tanker drivers sourcing from private boreholes or from illegally tapping the water mains. In these ways, the non-state sector has long been involved in meeting the water needs of the urban poor – although they have often been ignored because they are informal. Private water vendors (PWVs) play a critical role in supplying 20 percent or more of the urban population of developing regions (World Bank 1998). Some studies quote cases of up to 80 percent, thus demonstrating the extent of informal private sector involvement (Collignon and Vezina 2000).

The key advantage of the service provided by PWVs is the facility for customers to pay small amounts of money for small amounts of water at times that are convenient to them. The poor cannot afford the high connection fees and monthly or quarterly bills charged by government providers, particularly when those utilities demand payment at a centralised office, requiring an expensive journey from home. Yet because PWVs do not have access to economies of scale, let alone government subsidies (except perhaps where they steal the water) the price that the poor are paying is always significantly higher than that of formal government providers, even where the latter has been increased to an economically viable level. In addition, vendors often

provide poorer quality water. Furthermore, such water requires household storage facilities - another source of contamination - and this carries an additional cost where space is at a premium in very high-density informal housing areas. Through their existing high payments to PWVs, the poor have demonstrated their willingness to pay consumption charges. The priority has to be to deliver connections to all by focussing any subsidies on the cost of connection.

It is the newly involved private sector that is now coming under most pressure to address these priority needs of the urban poor. This is ironic because in most countries it was the assumption that the private sector would not serve the poor that justified government involvement in direct water provision in the first place. This assumption has proved incorrect for several reasons. First, governments have developed mechanisms through performance targets built in to concession contracts to require private operators to serve the poor. Second, private operators have realised that in order to operate successfully in the highly politicised environment of large cities in low and middle-income countries, they must address the water needs of the poor. Third, private operators have found that water sales to the poor can become a significant market share. Constituting as much as 50 percent of the total potential market, the poor cannot be ignored, politically or financially. For these reasons, the challenge for the private operator in low-income countries to address the water needs of the low-income groups is an integral part of its overall objective to generate an adequate profit from producing good quality water.

International private operators have adopted a range of approaches in order to meet this challenge. A common key characteristic of these approaches has been to address the needs of the poor in a flexible and creative manner – being prepared to ignore the conventional rules for water connections. In effect, the large private operators have had to learn to emulate the small-scale independent providers by becoming aware of the needs of their customers at the local level and to emulate the NGOs through techniques of participatory development. The end result has been to focus on ways to minimise connection costs and connection fees and then to facilitate small but regular payments by the poor – but all within the context of a reformed supply of potable water benefiting from the economies of scale of a pipe network.

International private operators have developed many new facets of capacity in order to operate as direct water providers in low and middle-income countries. To address the water needs of the poor requires a high degree of creativity and adaptability. Serving the poor in illegal unplanned areas has never had to be a core competence of international private operators in their domestic markets. A clear advantage that private operators have over the public sector in this respect is precisely their motivation and willingness to be innovative and flexible in searching for ways to solve problems. One French company, Ondeo, has displayed the competence for such flexible and lateral thinking. It is developing the necessary ‘mechanical-organic’ capacity by investing in pilot projects and partnerships with NGOs in order to find a way to serve the poor.

The Metro Manila concession contract in The Philippines

Innovative approaches to addressing the water needs of the poor are also a feature of 'the largest water privatisation' to date, the Metro Manila (11 million population) concession contract signed in 1997, which envisages US$7,000m investment over the 25-year term of the contract. Two private operators won contracts - Manila Water in the East Zone concession area (Ayala/International Water/United Utilities) with a price reduction of 74 per cent and Maynilad in the West Zone (Benpres/Ondeo) with a 43 per cent price reduction.

Hitherto, criminal gangs and profiteers operated a distribution system in the squatter areas that took advantage of the lack of access of households to the formal network. These gangs provided lower quality water that was several times more expensive than that of the state utility. It was supplied from water tenders, vendors sourcing legally or illegally from the water mains, or from private wells. The poorest households spent up to 12 percent of their income on buying water from vendors.

The concession contract specified a rapid attainment of universal coverage. Furthermore private operators had to demonstrate a work schedule that would ensure that service improvements were not unfairly delayed, especially in poor areas. They were required to move from the 67 per cent water coverage in 1997 to 100 per cent coverage within ten years, provision of 24-hour water supply to all connections by mid-2000 and a guaranteed pressure for all connections by 2007.

Under the terms of the contract the private operators were able to claim 'service coverage' to the poor by providing one standpost per 475 people, an unreasonably high number. They could charge for the water delivered from standposts, whether they were operated by individuals, officials or community associations. However, problems arose of non-payment by the assigned association or local government officials as well as abuses in the management of standpoints, such as charging exorbitant prices and irregular operating hours that limited access.

In response, one of the operators, Maynilad, experimented with the individual household connections that most customers prefer. This programme waives the land title requirement previously required by the government water provider and enables payment for connection fees by instalments over 12-24 months. These instalments are added to the regular monthly water bills so that payment begins only upon receipt of the first bill and not before installation.

As part of the agreement between the private operator and the community to reduce the connection fee, communities provide voluntary labour for carrying pipes and digging trenches. To ensure fair cost recovery each connection is metered but to reduce costs the operator provides a group of conveniently located meters on the water main (convenient for reducing costs as well as for easier subsequent meter reading) from where each household makes its own

connection, generally using plastic pipes above the ground to minimise costs. The private operator uses the skills of NGOs, both national and international, to act as social intermediaries in order to facilitate their operations in poor areas.

These innovations have led to an 80 - 90 per cent reduction in water costs for a family using $10m^3$ of water per month, compared with previous water purchased from PWVs, then at lower volumes because of the cost. Household members who had been used to walking some distance or queuing for hours, appreciate the benefits and convenience of a direct connection. They no longer need to invest in containers to store water that had become a source of contamination as well as a waste of valuable space

Manila Water, the other private operator, has also experimented with serving the poor. It uses group taps for between two and five households, whereby users form groups, register connections and share the cost of usage. Community managed water connections, as well as some privately managed water distribution connections, have also been used, whereby a community or private company takes on the role of water retailer. However, these distributors do not always benefit from a bulk water tariff and so may be caught by the effects of increasing block tariffs on a single meter with multiple users. Although the householders using this system may pay 80 percent less than previously, this is still more than twice the average payment of a household with a similar consumption but with an individual connection. There is also a considerable administrative burden on a few members of the community who must collect the payments and pass them on to the operator.

As a result of these initiatives, major changes have been observed in the appearance of those areas where individual household connections have been made. Houses that used to be made of temporary materials are now made of more permanent materials such as hollow blocks and cement. The containers or drums for storing water that were a common sight outside houses are now hardly ever seen. Other indirect benefits of the introduction of individual connections come from the time that is freed up from collecting water. Mothers have more time to care for their children. Residents in poor communities have also benefited from employment because the private operators require their contractors to hire local workers for construction work.

The Metro Manila partnership between the public and private sector has resulted in significant improvements for the urban poor. Maynilad increased household connections by 23 per cent in the first three years, Manila Water by 14 per cent. The private operators considerably improved the quality of service although the target of 24-hour supply for all connections by mid-2000 was not achieved. (Inocencio 2002).

Topic 8: How can the state most effectively build up the capacity of the non-state sector to provide public services?

There is little that the state in low and middle-income countries can contribute to building up the capacity of global water corporations to provide effective

water supply for the urban poor. These international private operators already possess technological capacity and proven experience far beyond that of most states, national or local. By contrast, despite the considerable pool of local engineering talent, national private operators are still weak and inexperienced in such countries because of the long history of direct state provision. India is a striking example in this respect.

But governments in low and middle-income countries can help to build up the capacity of national private operators through the design of concession contracts, by stipulating that potential bidders must form consortia with local partner companies. Already domestic partners are beginning to take a lead role within such consortia. For example, Manila Water now regards itself as a Philippine company, notwithstanding its partnership with International Water, thanks to a government requirement of 60 per cent local participation in the consortium. Less encouragingly, Benpres, the national partner within Maynilad, the other consortium operating in Manila, reportedly wants to sell its share of the business in order to raise money to support its other activities (Global Water Report 2002).

Such state promotion of national private operators has special relevance when addressing the water problems of non-metropolitan 'secondary' cities with less than 0.5m population. Major international private operators view contracts for these cities as unprofitable because projected turnover falls below the minimum required to absorb the high fixed costs of expatriate managers (a minimum of US$250,000 per year). The failure to employ an expatriate jeopardises the 'international' element in the contract that plays such a vital role both in overcoming the 'restraining forces' opposed to sector reform and in assuring the financiers that the system is being managed in such a way that minimises the risk of loan default. In this respect, the 2002 purchase of Wessex Water (UK) by a Malaysian company, YTL Power International Berhad, is a promising pointer towards the development of international experience by national private operators. YTL's unique combination of much lower average cost per expatriate and international experience positions it well to extend the benefits of private direct providers to secondary towns in low and middle-income countries.

Topic 9: How can the informal sector be encouraged to make a contribution to service delivery?

There are several ways in which governments can encourage the informal sector to make a positive contribution to urban water supply. One way is to encourage community management of public standposts. The fact that standposts are usually provided free of charge and that service quality is poor (both in terms of hours of supply and water quality) often destroys any sense of ownership or responsibility by users for 'their' standpost. A vicious circle then develops as vandalism lead to taps either being stolen or left permanently open. In turn, this results in higher unaccounted for water and even less concern by the provider to maintain the service. Community management can break this vicious circle but success depends on the

community being sufficiently motivated to maintain effective oversight over who is using the tap.

A related development is community management of billing. The National Water Supply and Drainage Board (NWSDB) in Sri Lanka has introduced metering for standposts with the bill shared between the members of the local community. Slum improvement projects by the Ghana Water and Sewerage Corporation (GWSC) have similarly tried to promote revenue collection and improve quality. A community member, usually female, has a key to the padlock that locks the tap, which is opened at agreed times of the day for use by designated members. Until 1999 many residents of Nelson Mandela, a squatter settlement on the outskirts of Cartagena, Colombia, obtained water by illegal connections and from water tankers supplied on an irregular basis by the municipality. In January 2000 an international private operator introduced collective payment for water. Water supplied to 3,600 households is now measured by ten separate macro-meters, and the area served by each of these is billed collectively. The leaders of the respective community organisations are responsible for organising payment of a standard contribution by each household (Nickson 2001).

Poverty oriented non-governmental organisations (NGOs) have begun to look for ways to solve the water needs of the urban poor. In the first instance, NGOs can use the techniques that have proved effective through their experience in rural areas. For example, in some cities the topography means that groundwater is available through springs and hand-dug wells that can be protected with sanitary aprons to ensure proper drainage of spilled water and therefore clean collection of drinking water. In Kampala, Uganda a project to support basic health care initiatives in Kawempe, a suburb with a population of 390,000 that was not being served by the government direct provider, responded to the requests of the community to assist in protecting springs. Local Water Source Management Committees achieved this with community contributions of labour and finance, thereby ensuring a clean water supply without the need for connection fees or consumption charges (Kayaga 2002).

However, there are dangers in promoting the use of groundwater in many cities where on-plot and on-site sanitation is necessarily the appropriate solution to disposal of wastewater. Recognising that it is usually cheaper to pipe in clean water than to pipe out wastewater, NGOs have turned towards devising innovative ways to access the pipe network. In most of these pilot projects, they have played the role of intermediary between the government utility and the urban poor. The Kawempe project in Kampala also found that householders recognised the problem of potential contamination and constructed standposts in areas chosen by the committees on land donated by residents. The water committees supervised construction and took responsibility for collecting the daily proceeds from water sales. Furthermore, ‘bookkeeping of the water sales transactions is emphasized and is a pre-requisite for continued support by the project. NGO staff inspects the cashbooks on a periodic basis. With the assistance of the local council, households who are considered poorest in the community are provided with

40 litres of water daily free of charge from the public standposts in the project area' (ibid).

In Dhaka, Bangladesh, an NGO (Dusthya Shasthya Kendra–DSK), in partnership with the government utility and the municipality, has been enabling communities to form water committees to take responsibility for a shared connection. The eight members of these committees are all women with a five member male advisory board to limit social intimidation of the women. The NGO finances the initial construction of a water point that comprises a ground tank with a handpump fitted for abstraction. The handpump also acts as a natural limiter to the amount taken. The depth of the tank ensures that it fills whenever water flows, even at characteristically low pressures. Water is paid for according to consumption or, if the community so chooses, per household. The water committee delivers payment, with NGO assistance, to a bank account jointly held with the NGO. From this account the metered water bill is paid to the utility that is prepared to accept the NGO as the guarantor. After a year or two, when confidence in the system has been established, the NGO passes all responsibility for the account to the water committee whilst maintaining a limited monitoring role. Payments made to the committee also include payment to the NGO for its investment in the water point – revenue that it then recycles to invest in new water points. The utility is pleased to have paying customers rather than a free standpost. The municipality is pleased to supply the land for the tank at the edge of one of their roads in order to ensure that water is available to at least some poor residents. This approach emphasises again the two key aspects of services for the poor – facilitating connections and allowing small, frequent payments (Enayetullah 2002).

These examples show that the poor are indeed able and willing to pay for water services that are made available at the right time in the right way, usually with convenience and ease of use in mind, rather than public health. They also show that NGOs have demonstrated the creativity and flexibility necessary to find these new ways to serve the poor.

Conclusions

The 2002 World Summit on Social Development (WSSD) held in Johannesburg set the ambitious target of halving by 2015 the 1,200m people in the world who currently lack access to clean water and the 2,400m people who lack improved sanitation, and to achieve improved water and sanitation for all by 2025. In fact, these targets simply re-affirmed one of the so-called 'Millennium Development Goals' or (IDTs) already substantially agreed in 2000. A new Global Task Force for Water and Sanitation is being set up to monitor progress. It joins a plethora of global bodies already entrusted with the task of promoting 'water for all' – The World Water Council and its Third World Water Forum, the Global Water Partnership, the Water and Sanitation Collaborative Council.

But it is questionable what can Johannesburg deliver that has not been achieved by previous international water conferences in Dublin (1992), Rio (1992), The Hague (2000) and Bonn (2001). Those conferences have already

instilled in policy-makers the overarching message that water is a finite and vulnerable resource that has an economic value in all its competing uses, that participatory management and the involvement of women is crucial, that integrated water resources management is critical for sustainability, and that water is also a human right that the poor in particular must be able to access.

Media coverage of the WSSD highlighted the commitment of more 'aid money' in the form of a series of donor-funded initiatives as the key factor in achieving these and other global development targets. Yet the amount of new concessionary finance that is made available to the sector is not the key factor that will determine success. The financial and technical challenges are quite straightforward and uncomplicated. The crucial factor determining success in meeting the global water and sanitation targets relates to the governance of the sector, namely the institutional arrangements for service delivery.

But there is a price to be paid by consumers and governments alike in order to meet the challenge of improved governance in the urban water sector. There is the financial cost to be borne by consumers through the introduction of cost reflective tariffs for efficient water supply. There is overwhelming evidence that customers in general, and the poor in particular, are willing to pay that price. This is particularly so when, as in Manila, as a result of the private concessions, the amount that the urban poor pay for water falls by up to 90% whilst the quality and convenience increases dramatically.

There is also the political cost to be borne by governments, both politicians and administrators, from challenging vested interests, by increasing tariffs and initiating sustainable reform in the urban water sector. To ensure that these costs to be paid are reasonable, reform is likely to involve a significant increase in the involvement of the non-state sector in the delivery of water and sanitation services together with the parallel introduction of incentive-based price regulation supported by comparative competition. In the light of its 'merit' good nature, significant private sector involvement in the direct provision of urban water should not be automatically necessary. However, given the present state of provision by the public sector in many low and middle-income countries, it is undoubtedly required. There is simply insufficient public sector capacity to provide a good level of service to all. In contrast, international private operators already have the capacity to create efficient water companies and are fast developing the capacity to serve the urban poor. The urgent task is to challenge and convince governments that this political cost is a price worth paying.

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