

Social Policies and Water Sector Reform

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Acronyms

GDP	gross domestic product
OECD	Organisation for Economic Co-operation and Development
Ofwat	Office of Water Services
PSP	private sector participation
SOE	state-owned enterprise
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNRISD	United Nations Research Institute for Social Development
WHO	World Health Organization

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Summary/Résumé/Resumen

Summary

Increasing coverage and maintaining infrastructure are two of the biggest challenges confronting the water supply sector in both industrialized and developing countries. The last two decades have witnessed reform in this sector that has resulted in increased private sector participation (PSP), and it is now time to investigate whether such reform has managed to increase access without creating additional burdens, especially on the poor. A research project carried out by the United Nations Research Institute for Social Development (UNRISD), *Social Policy, Regulation and Private Sector Involvement in Water Supply*, has demonstrated the shortcomings of concession-type contracts and how regulation in developing countries is faced with major challenges. Based on this research, the present paper demonstrates that, in such circumstances, regulation should be complemented by social policies when reforming the water sector.

This paper draws lessons from seven country studies: Brazil, Burkina Faso, Colombia, Great Britain, France, Hungary and Malaysia. All of these country studies show the shortcomings of PSP and how social policies are crucial in addressing the issues of access and affordability. The choice of social policies varies from country to country. In France and Great Britain, heavy public investment was used to ensure universal access to piped water. In these countries, even with high regulatory capacity, social policies in the water sector have been crucial. For example, in France, they consist mainly of ex-post assistance to those who cannot afford to pay their water bills, operating a fund for rural water supply and prohibition of disconnection. Social policies in Great Britain include income support based on property values, subsidies, a ban on disconnections, various forms of social security support and social assistance in paying water bills. In addition, there exists an effective and independent economic regulatory body.

In the case of Colombia, a subsidy helps provide the poor with access to affordable water. In addition, investment commitments prescribed to the private sector have been useful in increasing coverage. Similarly, in Brazil, the desire to make water supply universal led to heavy investment in the 1970s, and effective social policies (cross-subsidies) helped to increase coverage among the poor. However, the current impasse on whether the state or municipality has the right to grant concessions to the private sector is jeopardizing further progress. The government in Hungary provides subsidies to regions that have high production costs. In addition, industrial users cross-subsidize domestic consumption, and income transfers by central or local authorities shoulder some of the households' burden of water expenditures. Tariffs are kept low (a "hidden" social policy) and no disconnection is allowed in the case of non-payment of bills. The private sector has increased efficiency in the system, but investment is financed by the state. In Malaysia, the social policies that are in place comprise state financing of water supply in rural areas, cross-subsidy (industrial users to domestic) and a lifeline block tariff. In addition, the private sector is contractually obliged to increase coverage in urban and rural areas. In Burkina Faso, although the efficiency of the network has substantially improved with commercialization through PSP, there is growing pressure to dismantle social policies.

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Résumé

Etendre le réseau et entretenir l'infrastructure, tels sont les deux grands défis lancés au secteur de l'eau dans les pays en développement comme dans les pays industrialisés. Les réformes qui ont été réalisées dans ce secteur au cours des deux dernières décennies ont abouti à une participation accrue du secteur privé (PSP). Aussi le moment est-il venu d'enquêter pour savoir si ces réformes ont réussi à rendre l'eau plus accessible sans imposer de charges supplémentaires, en particulier aux pauvres. Un projet de recherche exécuté par l'Institut de recherche des Nations Unies pour le

développement social (UNRISD), *Politique sociale, réglementation et participation du secteur privé à l'approvisionnement en eau*, a démontré que les contrats de type concession présentaient des lacunes et que la réglementation dans les pays en développement posait des défis majeures. Se fondant sur cette recherche, l'auteur du document fait valoir que, dans ces conditions, les politiques sociales devraient compléter la régulation au moment de réformer le secteur de l'eau.

Le document tire les leçons des études réalisées dans sept pays: au Brésil, au Burkina Faso, en Colombie, en Grande-Bretagne, en France, en Hongrie et en Malaisie. Toutes ces études mettent en évidence les lacunes de la PSP et l'importance des politiques sociales pour rendre l'eau à la fois accessible et abordable. Les politiques sociales choisies varient d'un pays à l'autre. En France et en Grande-Bretagne, l'Etat a consenti de gros investissements pour assurer l'accès universel à l'eau courante. Même dans ces pays dotés d'un grand pouvoir de contrôle, les politiques sociales ont été cruciales dans le secteur de l'eau. En France, par exemple, elles consistent essentiellement à aider a posteriori ceux qui ne peuvent pas régler leurs factures d'eau, à gérer un fonds pour l'amenée de l'eau dans les zones rurales et à interdire les coupures d'eau. En Grande-Bretagne, elles consistent en un revenu minimum garanti, calculé en fonction des indices de fortune, en subventions, en une interdiction de couper l'eau, en diverses prestations de sécurité sociale et aides au règlement des factures d'eau. Il existe en outre un organe de surveillance économique qui est indépendant et efficace.

En Colombie, une subvention aide à rendre l'eau accessible aux pauvres à un prix abordable. De plus, l'obligation d'investir imposée au secteur privé a contribué à l'extension du réseau. De même, le Brésil, désireux d'alimenter en eau tous les ménages, a beaucoup investi dans les années 70, et des politiques sociales bien conçues (subventions transversales) ont aidé à étendre le réseau parmi les pauvres. Cependant, la question de savoir si l'Etat ou la municipalité a le droit d'accorder des concessions au secteur privé mène actuellement à une impasse qui empêche de progresser encore. En Hongrie, le gouvernement subventionne les régions qui ont des coûts de production élevés. De plus, les usagers industriels subventionnent la consommation des ménages, et les transferts de revenus auxquels procèdent les autorités centrales ou locales aident certains des ménages à faire face à leurs dépenses d'eau. Les tarifs sont maintenus bas (politique sociale "déguisée") et il est interdit de couper l'eau en cas de non-paiement des factures. Le secteur privé a accru la rentabilité du système mais les investissements sont financés par l'Etat. En Malaisie, l'Etat finance l'amenée d'eau aux zones rurales, les usagers industriels subventionnent les ménages (subventions transversales) et un tarif forfaitaire est appliqué aux plus démunis. Outre ces politiques sociales, le secteur privé est tenu par contrat d'étendre le réseau dans les régions urbaines et rurales. Au Burkina Faso, bien que le fonctionnement du réseau se soit sensiblement amélioré avec l'entrée en scène du secteur privé, les pressions tendant à un démantèlement des politiques sociales sont de plus en plus fortes.

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Resumen

La ampliación de la cobertura y el mantenimiento de la infraestructura son dos de los desafíos más importantes que confronta el sector de suministro de agua tanto en los países industrializados como en las naciones en desarrollo. En el transcurso de los últimos dos decenios, se ha llevado a cabo una reforma del sector que ha conducido a una mayor participación del sector privado, por lo que resulta propicio investigar si la reforma ha logrado incrementar el acceso al agua sin generar cargas adicionales, sobre todo para los pobres. El Instituto de Investigación de las Naciones Unidas para el Desarrollo Social (UNRISD) llevó a cabo un proyecto de investigación titulado *Política social, regulación y participación del sector privado en el suministro de agua*, con el cual ha demostrado que los contratos de concesión presentan deficiencias y que la normativa vigente en los países en desarrollo enfrenta problemas de envergadura. Con base en esta investigación, se argumenta en este documento

que, bajo tales circunstancias, que la regulación venga acompañada de políticas sociales al reformar el sector de los recursos hídricos.

En este documento se reflejan las lecciones aprendidas a partir de sendos estudios conducidos en los siete países siguientes: Brasil, Burkina Faso, Colombia, Francia, Gran Bretaña, Hungría y Malasia. Todos estos estudios revelan las deficiencias de la participación del sector privado y la importancia fundamental de contar con políticas sociales para abordar los problemas de acceso y asequibilidad. La selección de las políticas sociales varía con cada país. En Francia y Gran Bretaña, se utilizó una cuantiosa inversión pública para garantizar el acceso universal al agua por tuberías. En estos dos países, aún con una alta capacidad regulatoria, las políticas sociales en el sector del agua han sido cruciales. Por ejemplo, en Francia, estas políticas consisten principalmente en brindar asistencia posterior para las personas que no están en capacidad de pagar sus cuentas de agua, mediante la operación de un fondo para el suministro de agua a las zonas rurales y la prohibición de la suspensión del servicio. Las políticas sociales aplicadas en Gran Bretaña contemplan el apoyo a los ingresos basado en el valor de la propiedad, subsidios, la prohibición de suspender el servicio, diversas formas de apoyo a la seguridad social y asistencia social para pagar las cuentas del servicio. Además, existe un organismo regulatorio económico eficaz e independiente.

En el caso de Colombia, se aplica un subsidio para ayudar a los pobres a tener acceso a un servicio de agua costeable. Además, se han conferido diversos compromisos de inversión al sector privado que han contribuido a ampliar la cobertura. Igualmente, en Brasil, el deseo de universalizar el suministro de agua propulsó una ingente inversión en la década de los setenta, a lo cual se sumaron políticas sociales eficaces (subsidios cruzados) que permitieron incrementar la cobertura para las poblaciones pobres. Sin embargo, el atolladero en que se encuentra este país, en torno a si es el estado o el municipio quien tiene derecho a conferir concesiones al sector privado, ha puesto en peligro la posibilidad de seguir avanzando. El gobierno de Hungría otorga subsidios a las regiones que tienen altos costos de producción. Por otra parte, los usuarios industriales mantienen un subsidio cruzado al consumo doméstico, y las transferencias de ingresos por parte de las autoridades centrales y locales ayudan a aliviar parte de la carga de los gastos por concepto de agua para los hogares. Las tarifas se mantienen bajas (lo que constituye una política social "oculta") y no se permite la suspensión del servicio si no se pagan las facturas correspondientes. El sector privado ha aumentado la eficiencia del sistema, pero las inversiones son financiadas por el Estado. En Malasia, las políticas sociales en vigor son el financiamiento público del suministro de agua para las zonas rurales, los subsidios cruzados (de usuarios industriales a usuarios domésticos) y una tarifa fija por un volumen básico de subsistencia. Además, el sector está contractualmente obligado a ampliar la cobertura en las zonas urbanas y rurales. En Burkina Faso, si bien la eficiencia de la red ha mejorado considerablemente con la comercialización a través de la participación del sector privado, existe una creciente presión para eliminar las políticas sociales.

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Introduction

It is widely recognized that infrastructure development (transportation, telecommunication, energy, water) is a prerequisite for social and economic development. Although, historically, private initiatives were instrumental in the development of some of these types of infrastructure, it has traditionally been the responsibility of the state. Expanding and maintaining infrastructure represent major challenges for many countries. This paper highlights some of the issues surrounding private sector participation (PSP) in the water supply sector and presents the results of the United Nations Research Institute for Social Development (UNRISD) research project, *Social Policy, Regulation and Private Sector Involvement in Water Supply*.

At the time of writing, over one billion people worldwide do not have access to drinking water, especially in developing countries. The World Health Organization (WHO) estimates that in 2005, 1.6 million children under the age of five (an average of over 4,000 every day) died from unsafe water and inadequate hygiene. In addition, the importance of the connection between water and poverty has now been recognized by the international community. Target 10 of the United Nations (UN) Millennium Development Goals—“Halve by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation”—is evidence of this growing concern. As a consequence, countries are required to increase access to a safe water supply.

Both maintenance and extension of water supply networks require colossal investments. The most common solution proposed consists of market-based reform, which includes operating the system on a full cost-recovery principle, commercialization or PSP of varying degrees. Given that water is a basic necessity, affordability of the service becomes a major issue. However, the water industry is a natural monopoly and as such it is not free from problems associated with lack of competition, regardless of who owns or operates the system. Such problems may include charging higher prices or lowering production costs by decreasing the quality of service. In these circumstances, government intervention, either through public management or through appropriate regulation, is often proposed.

There are several important challenges facing the water sector in both developing and developed countries (Hall 2001). The first challenge consists of maintaining the existing infrastructure, which includes reducing leakages and replacing and expanding networks. In order to achieve this, there is a need for financial autonomy including sustainable and equitable tariffs, and efficient revenue collection. In addition, the utility company should be properly managed, which would include building managerial capacities and improving efficiency and productivity. Since water is a basic necessity, sociopolitical issues such as an affordable price, transparency and accountability must be considered. And finally, issues of environment and health such as public health needs, conservation and environmental management must be dealt with in an appropriate manner.

One way these challenges have been tackled is through PSP, which, in the water industry, is one of the most controversial and emotional debates of the current development discourse. On one side are the proponents who argue that since governments have failed in delivering quality water to everyone, the private sector could solve this problem by using market principles. In other words, the private sector can improve efficiency, extend the coverage of service, bring in more investment and relieve government budget deficits. On the other side of the spectrum are those who consider that water is a common good and should not be in the hands of the private sector. They argue that since water is the essence of life and is unlike any other resource, it should not be treated like a commodity to which market principles could be applied. In other words, the private sector cannot apply just criteria for this merit good. In this context, universal access to water becomes a human right, and it is the state's obligation to provide this vital resource to everyone. And then there is another group who stands in between these two extreme positions. This group thinks that solutions can be found by considering water as an

economic good and a human right at the same time. It is within this context that the current debate is taking place.

Although the private sector has a long history of involvement in water supply in industrialized countries, PSP is a relatively new phenomenon in developing countries. The general privatization and deregulation wave of the 1980s also affected the water supply sector. During the early 1990s, many developing and transition countries involved the private sector in their water supply. Different varieties of PSP were experimented with, ranging from build-operate-transfer models, management, service or lease contracts, concessions (the most common) and joint ownership (but rarely complete privatization, as in the case of England and Wales and some cities in Chile). After close to two decades of such experimentation, it is time to investigate the impacts of these policy reforms.

This paper contextualizes the debate of PSP and presents some new findings from the UNRISD project. It starts by outlining the theoretical framework, then presents a historical perspective of PSP in water supply. The third section argues that water is a unique good that merits different policy options. In the fourth section, it presents the arguments for PSP, some statistics and reasons why there was an increase in PSP in the 1990s and early 2000s. The fifth section demonstrates why social policies and public investment were historically important for increasing access to affordable water supply. The sixth section presents the research findings and shows why policy makers should not forget about social policies when undertaking reform of the water sector. The final section draws conclusions that are relevant for policy making.

Theoretical Framework

Market-based reforms, including privatization, have encountered considerable challenges and failures, especially in developing countries. This has led policy makers to argue that in natural monopolies, such as the water industry where competition is difficult, the state should set up independent regulatory institutions. Within the general restructuring and privatization framework, the establishment of regulation was generally prescribed by donors in order to attract more aid and provide the private sector with incentives for investment in infrastructure sectors. It was argued that regulatory institutions should be coherent, accountable, transparent and predictable independent bodies (Kessides 2004). Furthermore, they should have the capacity to protect consumers, investors and the environment.

However, scholars such as Buchanan (1972), Newbery (1999) and Laffont (2000) have argued that interest groups have often controlled the regulatory process, while others such as Stiglitz (1998) have argued that politicians have controlled regulation. Recent research has shown that building independent regulatory institutions in developing and transition economies presents a major challenge, and that the results have been rather disappointing,¹ as a result of poor accountability, deficient transparency and lack of consistency in developing countries (Parker 1999). A World Bank (2006) publication also recognized that after the creation of over 200 regulatory entities worldwide during the past 15 years, there is now ample evidence to show that regulatory systems have failed to achieve the expected sector outcomes. Very often, regulation becomes an end in itself rather than a means of achieving social, economic and environmental objectives for the well-being of the population. Similarly, previous UNRISD research has shown that regulation of water services through independent bodies has encountered difficulties in many developing countries (Ugaz 2006). This is a result of a poor tradition of independent policy-making bodies, weak institutions and uneven bargaining power between the stakeholders. Lack of effective and transparent regulation hampers the accountability of any service provider.

¹ See, for example, Kirkpatrick and Parker (2004); Jalilian et al. (2007); Minogue and Carino (2006); Amann (2006); Cook and Mosedale (2007).

This takes us back to square one: *plus ça change, plus c'est la même chose* (the more it changes, the more it remains the same). This paper investigates the impact of PSP in water supply through a social policy framework. "Social policy" refers to any policy put in place by the government or its bodies to improve the welfare of the population, especially its less privileged members. According to UNRISD (2006:1):

Social policy is a state intervention that directly affects social welfare, social institutions and social relations. It involves overarching concerns with redistribution, production, reproduction and protection and works in tandem with economic policy in pursuit of national social and economic goals.

Such policies are also based on the notion of *equity*, which addresses concerns of justice, equality and rights. Equity here implies a distributional principle, applied to services and benefits in order to achieve what is considered a just and fair allocation.

Social policies related to water supply are quite common in both developing and developed countries alike, with the most widespread forms being *income support* and *tariff adjustment*. The former are linked to welfare systems and include housing benefits, charities, tariff rebates, flexible payment methods, connection subsidies and vouchers. The latter comprise increasing block tariffs, cross-subsidies and special tariffs for low-income households.

There is much ambiguity when defining regulation since it depends on whether an economist, lawyer, political scientist or social scientist defines it.² In the case of PSP in the water sector, regulation often refers to a diverse set of instruments by which *government*, through an independent agency, protects consumers, investors and the environment. Such instruments include laws, orders and rules issued by all levels of government and by non-governmental bodies to which governments have delegated regulatory powers. In this view, regulation not only means creating institutions, but also defining the "rules of the game" (Minogue 2005; Kirkpatrick and Parker 2004). In other words,

regulation refers to the promulgation of an authoritative set of rules, accompanied by some mechanism, typically a public agency, for monitoring and promoting compliance with these rules (Baldwin et al. 1998:3).

In this sense, regulation refers to all of the efforts of the state to promote the welfare of its citizens, including economic, fiscal and redistributive policies. It is widely recognized that having an independent agency in place is difficult, especially in developing and transition economies. For example, regulation is likely to be ineffective where corruption is rampant, the legal system is not independent or in countries with economic or political crisis.

Therefore, this paper argues that regulation should be complemented by social policies, explicitly pursued by the state. Even though there might be complementarities between social and regulatory policies, what makes them distinct is that the former are implemented and pursued by the state, whereas the latter are supposed to be implemented by an independent body.

Lessons from History

PSP in the urban water supply has had a long history. Private initiatives were instrumental in establishing modern water supply systems, which led to privately owned or operated systems. This started as a result of urban growth in the mid-1800s in most European countries and in North America. England was the precursor of modern water supply systems, which later spread to Germany, elsewhere in Europe and to the United States. However, during the late

² For instance, lawyers would incorporate a broader meaning of rules and institutions, while political scientists would also include the policy process.

nineteenth century, as a result of their unsatisfactory performance (inefficiency, high costs and, in some cases, corruption) or due to public health concerns in numerous European countries, many of these services were transferred to public or municipal ownership. At the time of writing, in the European countries, the provision of an urban water supply is quite diverse, ranging from no PSP (the Netherlands), PSP but with no profit motive (Austria, Denmark, Sweden), to an amalgam of PSP arrangements (Belgium, Finland, France, Germany, Greece, Italy, Spain), to full privatization (England and Wales) with strong regulation (Mohajeri et al. 2003).

Water supply (and sanitation), especially in poor countries, is one of the major challenges facing the development community. Yet debates about increasing coverage are not new; these debates took place in developed countries two centuries ago. At the beginning of the nineteenth century, water supply in major European cities was not sufficient, of low quality and often very expensive to provide to homes. By the early twentieth century, water was made available in adequate quantities and its quality had improved dramatically. And by the mid-twentieth century, access to water was quasi-universal. Looking at how different (now developed) cities dealt with managing their water supply over time can be instructive for understanding today's water supply challenges in developing countries.

Historically, the industrialized countries were concerned with increasing expansion of water and sanitation systems, and the improvements were directly linked to water sector legislation (Juuti and Katko 2005:220). The drivers of such expansions and improvements were the need for water supply in firefighting, lack and/or poor quality of water, environmental concerns, public health, industrial use, or various combinations thereof. It can be argued that the business motive was the main factor in considering the first private proposal in the mid-1800s.

The experiences of England, France, Germany and the United States are illustrative. Fragmented, piecemeal and localized systems were abandoned in favour of highly centralized and integrated water supply systems. This occurred in 1802 in Paris, in 1808 in London and in 1856 in Berlin (Gandy 2006). At that time, as in developing countries today, most of these cities originally relied on wells, private water vendors and rivers for their water supply. Most cities were reluctant to invest in public works such as water supply and, therefore, called on the private sector. One of the lessons that could be drawn from this experience is that public authorities started to pay more attention to water supply once the association between diseases (such as cholera, typhoid and diarrhoea) and water (sanitation) was established in the mid-nineteenth century through progress in research in bacteriology. Not only were the poor affected by water-borne diseases, but increasingly the middle and upper classes were also concerned. In New York, for example, real investment and expansion in the network started through the issuance of municipal bonds. Statistics show that by 1905 the largest category of municipal debt was related to waterworks (Cutler and Miller 2005). The problems were more acute in cities such as London where water sources were progressively more polluted due to the growing population and to industrialization. The declining role of the private sector is reflected in London's water supply statistics (Juuti and Katko 2005). In 1861, the share of private provision in water supply in larger towns was 60 per cent, which fell over time to 20 per cent in 1881 and only 10 per cent in 1901. The cholera epidemic in France, and damage caused by fires in London and Hamburg, were instrumental in initiating the development of water infrastructure.

Chadwick (1842) published one of the most influential reports on public health at that time. He argued and demonstrated that unsanitary housing conditions caused diseases and poverty in London. He also established the correlation between poor sanitation, defective drainage, inadequate water supply and overcrowded housing, and disease, high mortality rates and low life expectancy. For example, he claimed that proper sanitation and clean water could increase life expectancy by 13 years for the middle class. Chadwick also analysed the economic cost of public health and studied why access to water and sanitation should be universal. And he argued that it was a waste of valuable time when the poor needed to fetch water and wait long

hours in queues, whereas universal water and sanitation services would increase their productivity. An enlightened public health movement followed the publication of this report, starting with the Public Health Act of 1848. In the 1850s, public health was considered as a noble cause and building a water supply network became a prestigious symbol of the wealth of a city (Breyer 2006).

Despite these breakthroughs in developed countries, water-borne diseases still prevail in developing countries. WHO estimates that around two million people (of which 90 per cent are children under five) die every year from diarrhoeal diseases, the sixth most dangerous disease on a global scale.³ This means that over 4,000 children die each day from water-borne diseases.

What emerges from this historical perspective is that both public and private actors played important roles in developing water supply, and public authorities started investing in the system once the link between disease and water was established. However, the final responsibility lies with the state, through appropriate social policies, to ensure that there is universal coverage and that the poor are not excluded from the service.

The Uniqueness of Water

Water is a unique commodity. It is not only a physical good, but also a cultural and social resource with great economic and political significance. The water industry does not easily fit into standard economic theory of competitive markets (Ballance and Taylor 2005). There are significant *externalities* (social costs and benefits) attached to it, and the industry – as is often the case with utility services – is regarded as a *natural monopoly*. These characteristics jointly determine the economics of water.

Natural monopoly

Because of the existence of economies of scale, the drinking water market is not competitive. Due to a very high fixed cost and extremely low, usually constant marginal cost, the average cost of production declines as the level of production increases. To enter such an industry, enormous initial investment is required (laying down transmission networks such as water pipelines), but the marginal cost of connecting an additional customer to the network is very low (unless the new customer is very far from the existing network). The (sunk) initial costs are usually so high that they constitute an effective barrier to entry and, ultimately, only a single firm can survive in such a market. In the absence of competition, the sole company might abuse its market power and this can justify government intervention. A traditional solution to this kind of market failure is public ownership. This is often the case when public or national interests are at stake, for example, as in the case of national defence. However, governments can also choose to regulate private firms, for example, by controlling their prices (see the discussion above on regulation). Although economic theory suggests that private ownership should perform better than public, there is no compelling empirical evidence substantiating this argument. Numerous studies show that operational and economic efficiency comes from competition rather than from the ownership structure (Vickers and Yarrow 1988).

Although competition is generally desirable, competition within a natural monopoly, in particular, is very costly and unsustainable. Fletcher (1845) gave an account of how competition in water supply between different private companies in England (in the county of Surrey and in St. John's Southwark) caused inconvenience to the consumers and difficulties to the companies. The competition was so intense that the companies put two or three mains and pipes on the same street. The public was adversely affected by the poor quality of the service and frequent disruption due to continuous works on the street. Moreover, the companies had no incentive to supply water to less populated areas. Finally, they collectively decided to increase rates and in

³ See www.who.int/water_sanitation_health/publications/facts2004/en/index.html, accessed on 22 January 2007.

some cases to divide the areas of operation. This turned out to be detrimental to the consumers, and it was later decided that the principle of competition was not applicable to water supply (Wingate 1883).

Though competition *within* such a market is costly, it is possible to set up competition *for* the market. This has been, for example, the dominant organizational method for water services in France, although in this case the resulting degree of competition is limited by contracts that are often for long periods of time (15–20 years).⁴ Equally, competition can be used in one *part* of the market through outsourcing. Some water companies outsource a considerable proportion of their operations. An extreme case is Welsh Water, which outsources virtually its entire business, running just a skeleton staff to manage the contracts.

To sum up, the theory says that, if left alone, the water sector (or rather the consumers) will likely be fraught with all of the problems associated with natural monopolies. This may justify government intervention in the operation or management and regulation of the industry.

Private commodity versus merit good

As mentioned above, the water industry does not easily fall under standard economic theory. This makes it an atypical “economic good”. Contrary to a private good, a public good is *non-rival* and *non-excludable* (Anand 2007a). Non-rival means that consumption of the good by one individual does not reduce the amount of the good available for consumption by others. Non-excludability means that it is not possible to exclude individuals from the good’s consumption and, therefore, make them pay for it. For these reasons, such goods are unattractive to private firms. This can result in market failures where uncoordinated markets are unable to provide these goods in desired quantities. In such situations, governments may come into play to ensure a sufficient supply (through incentives, investments and subsidies).

The supply of water is finite and location specific. In contrast to a public good, there is a marginal cost attached to each unit consumed in the sense that additional costs are associated with production, purification and delivery of water to an individual’s home.

Alternatively, there is currently a growing tendency to treat water as an *economic good*. In other words, people should be charged for the water they consume and prices should be based on the cost of production and delivery. This is referred to as “full cost recovery”. This view has been greatly influenced by key international players such as financial institutions, donor governments and multinational corporations.⁵ The major push for applying market principles to the water sector comes from donor agencies such as the World Bank. For example, the World Bank’s (1993) *Policy Paper on Water Resources Management* clearly called for improving water efficiency through the use of prices (markets) and privatization. The World Bank’s 2000 Operational Policy, which replaced the 1993 strategy, again emphasized the price mechanism, but this time it softened the rhetoric on privatization and instead focused on how public and private entities could forge partnerships.⁶

Because of positive externalities and the merit good argument, water is an unusual good and makes a clear-cut classification very difficult. Its finite and locally specific supply makes it a rival good and, thus, implies that market forces should manage supply and demand. However, one should keep in mind that water is an essential resource, increasingly considered a human

⁴ Following the introduction of laws governing PSP in water and the bidding procedures, the duration of delegation contracts has, however, fallen significantly; most contracts are now signed for 12 years or less.

⁵ Although the United Nations (UN) does not have the power in terms of financial resources, it has managed to shape policies through UN conferences and declarations. One such international conference took place in 1992 in Dublin and focused on water and the environment. It was organized to prepare a statement for the Rio Earth Summit in the same year. The Dublin statement proposed four guiding principles including Principle 4: “Water has an economic value and it should be recognized as an economic good”. This principle has been used to justify the commercialization of water supply. Coincidentally, the emergence of water multinationals and the Dublin/Rio principles are linked with the multinationals becoming the vehicle for these principles.

⁶ See www.worldbank.org, accessed on 22 January 2007.

right (Anand 2007b; UNDP 2006) and, in spite of the type of ownership, affordable and universal access should be provided to it. As we will see later, this goal is not easy to achieve, in both developing and sometimes even developed countries, and there is not much consensus about the right solution(s).

Privatization as a Solution

Arguments in favour of privatization from a historical perspective

Some of the arguments in favour of state ownership rest on the assumption of market failure. However, state ownership has its own shortcomings, and privatization is seen as a remedy (Megginson and Netter 2001:329). Megginson (2005) argued that the policy of privatization has been one of the most visible signs of greater reliance on markets to allocate resources. He defines privatization as the sale of state-owned enterprises (SOEs) or its assets to private agents. According to him, privatization, for more than 100 countries, has increasingly become a legitimate and accepted tool of statecraft.

In general, there are three theoretical reasons for state ownership. One is to ensure that business enterprises balance social and economic objectives rather than focus exclusively on profit maximization. Second, intervention can also be seen as a response to market failure and the problem of natural monopolies (which rule out competition and, hence, its supposed benefits). And, third, it can be desirable in situations of informational asymmetries between the principal (public) and the agent (producer).

Historically, state ownership of businesses has arisen as a result of: (i) natural expansion of “royal power” in feudal or tribal societies (in antiquity and the middle ages); (ii) attempts to commercialize complex and new technologies (during the industrial revolution of the late nineteenth and early twentieth centuries); (iii) nationalization of failing private businesses aimed at either preserving employment or continuing the production of essential goods and services (during economic crises such as the Great Depression); (iv) ideology of state ownership (such as communism or certain forms of radical socialism); and (v) extreme political factionalism (state ownership of key industries as a political tool of reward and punishment) (Megginson 2005:5).

It is argued that Hayek’s *The Road to Serfdom* in 1944 had a direct impact on policy makers in the United Kingdom in justifying privatization in the 1970s (Megginson and Netter 2001; Megginson 2005). Hayek’s work provided the intellectual basis for Keith Joseph and later Margaret Thatcher and the British Conservative party (for example, David Howell) who started campaigning for rolling back the borders of the British welfare state. What followed was a worldwide movement toward privatization in the 1980s and 1990s as a result of the increasing “fiscal curse” and, later, due to the collapse of socialism. SOEs were seen as “inefficient” because governments used them to pursue non-economic objectives. Specifically, it was believed that this inefficiency was due to weak incentives (especially in terms of revenue maximization), lack of monitoring because of collective action problems and “soft budget constraints” since politicians will never apply strict private sector rules in terms of budgetary requirements.

The motives for privatization are different in developed and developing countries. In the latter, state ownership is just as important in order to promote economic growth, especially in physical facilities. In addition, after the colonial legacy most countries resented foreign ownership. Nationalization was justified as a way to overcome decades of colonial exploitation. Brazil, China, India and the USSR provided many developing countries with intellectual leadership in state ownership.

By the late 1970s, state ownership was common in both developed and developing countries. However, the poor performance of SOEs triggered the march toward privatization. In the early

1980s, Thatcher justified privatization of SOEs as a way to raise revenue for the state, promote economic efficiency, reduce government interference in the economy, promote wider share ownership, introduce competition and subject SOEs to market discipline.⁷

Although Thatcher was not the first to launch a privatization programme, it had a strategic importance since it was one of the most important ones.⁸ After the initial apparent success in Great Britain, other countries followed suit. In France, for example, this happened after a conservative government came into power in 1986. Two years later the arrival of the Socialist party stopped the further sale of SOEs, but did not attempt to re-nationalize the privatized companies. Austria, Belgium, Canada, Chile, Denmark, the Netherlands, Italy, Jamaica, Japan, Malaysia, Singapore, Spain, Sweden and the United States all began privatizing SOEs. For developing countries, the ascendancy of conservative politics was to be largely felt through the international financial institutions. The 1990s witnessed widespread privatization in Latin America; however, it is not yet widespread in sub-Saharan Africa and some observers argue that it is “something of a stealth economic policy” in this region (Megginson 2005:19). The last bastion against privatization has been the former Soviet bloc countries and Eastern Europe after the collapse of communism in 1989–1991.

The push for water privatization

Among the triggers for privatization of the water sector have been increasing debt burden, fiscal and macroeconomic burdens, public health crises and ideological shifts. It is argued that reform in the water sector had higher social gains (increased coverage, better service quality) but low political benefits (price increase, loss of employment) (Kessides 2004). PSP in the water sector has been “late and light”, compared to the privatization of other sectors such as electricity, telecommunications and transport (Davis 2005:147). There has been much controversy in the water sector due to the nature of water as a basic human need, fears of price increase, public health concerns, environmental implications and the belief that water cannot be transferred to a profit-making entity. As we have demonstrated above, these debates took place in England and the United States more than a century ago, when there was a shift from private to municipal ownership.

Privatization has been introduced in different regions of the world for different reasons. In Asia, it was launched to reduce budgetary deficits, increase economic growth, develop capital markets and improve services (Ait-Ouyahia 2006). In Latin America, it was initiated because of excessive political interference in public utilities and government corruption. As for the case of Africa, it was mainly aimed at reducing the financial burden of the state and increasing access to water for the poor. In Central and Eastern Europe, privatization was essentially introduced on ideological grounds (shift from communism to market economy).

Private sector investment in infrastructure increased dramatically in the early 1990s, reaching its peak in 1997 (see figure 1). Subsequently, the Asian financial crisis and successive crises in other countries, together with growing concerns about PSP in infrastructure projects and reservations among investors about going into developing countries because of weak regulatory instruments and market failures, led to a waning of private investment in general. As for investments in water supply and sanitation in particular, the private flows have been very erratic, reaching a peak in 1997 and falling to \$1 billion in 2003. There was a slight increase in 2004 followed by a decline in 2005 to the mid-1990s level of over \$1 billion. From 1990 to 2005, 55 countries (representing 383 projects)⁹ introduced some form or other of PSP in the water sector. In 2005

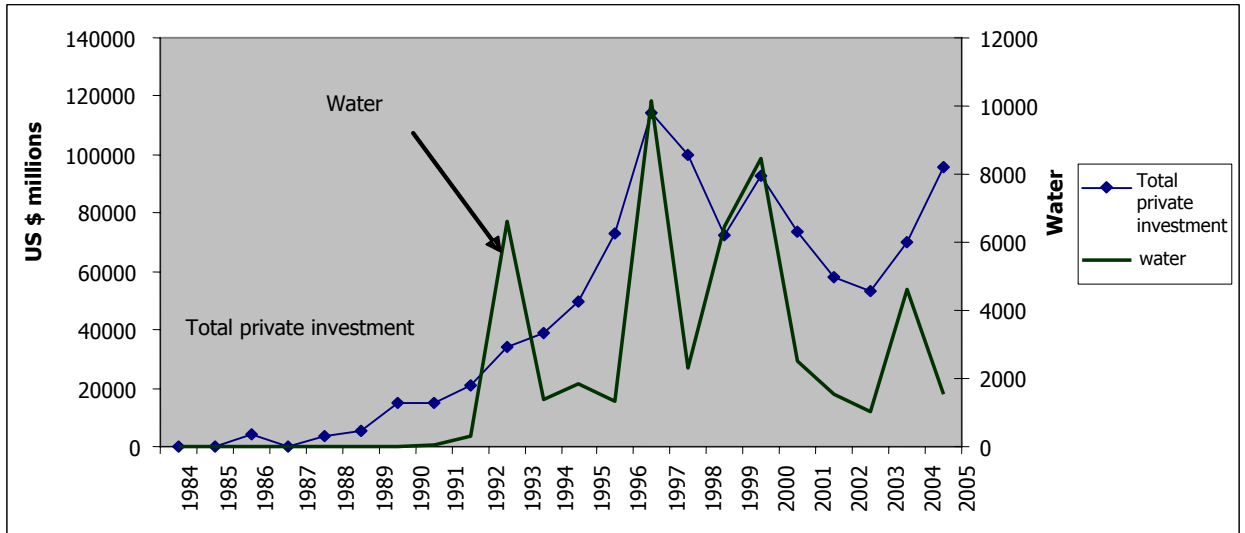
⁷ It should be noted that the Federal Republic of Germany (the government of Konrad Adenauer) launched the first large-scale ideologically motivated “denationalization” programme in 1961. It sold Volkswagen and the chemical firm VEBA.

⁸ Thatcher adopted the term “privatization”, which was originally coined by Drucker (1970) and replaced “denationalization”. See also Drucker (1968).

⁹ Based on the World Bank’s private participation in infrastructure database of low- and middle-income countries, the following countries have involved the private sector in their water supply: Albania, Algeria, Argentina, Armenia, Azerbaijan, Barbados, Belize, Bolivia, Brazil, Bulgaria, Central African Republic, Chile, China, Colombia, Croatia, Cuba, Czech Republic, Ecuador, Egypt, Estonia, Ghana, Guyana, Honduras, Hungary, India, Indonesia, Jordan, Kazakhstan, Lebanon, Malaysia, Mexico, Mozambique, Namibia, Niger, Panama, Papua New Guinea, Peru, Philippines, Poland, Romania, Russian Federation, Senegal, Serbia and Montenegro, Slovak

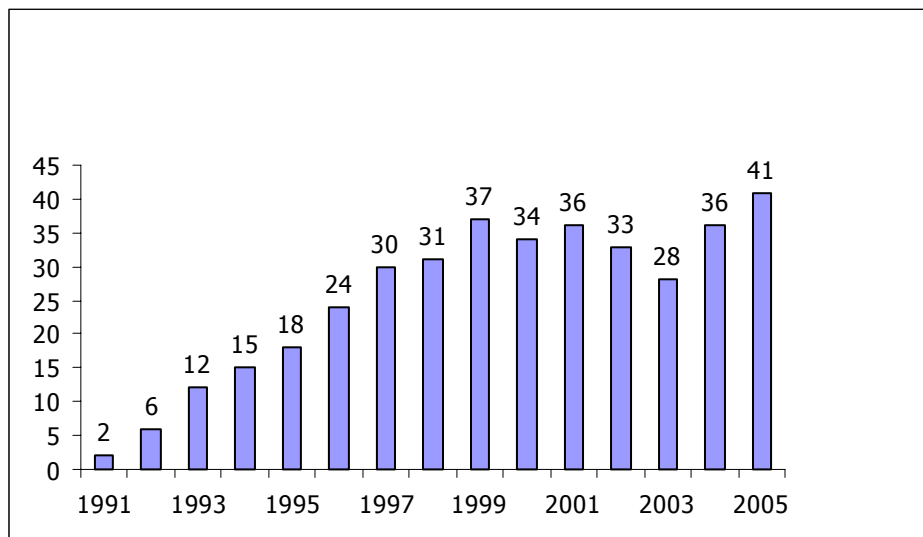
alone, there were 41 new investments in 10 countries in the water sector, 25 of which were in China alone (see figure 2).

Figure 1: Private sector investment in infrastructure sector, 1984–2005



Source: World Bank private project investment database, <http://ppi.worldbank.org/>, accessed on 28 June 2007.

Figure 2: Number of private investments in the water sector, 1990–2005

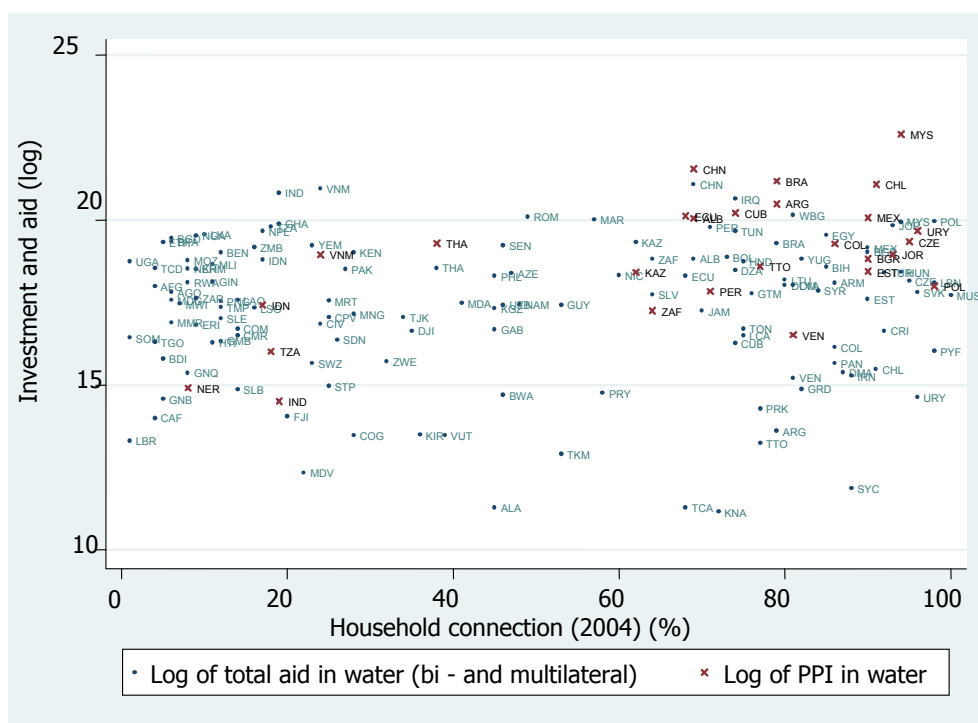


Source: World Bank private project investment database, <http://ppi.worldbank.org/>, accessed on 28 June 2007.

Republic, South Africa, Tanzania, Thailand, Trinidad and Tobago, Turkey, Uganda, Uruguay, Uzbekistan, Venezuela, Viet Nam, West Bank and Gaza (see <http://ppi.worldbank.org/>, accessed on 28 June 2007).

In order to develop water infrastructure, funds could either come from tax revenues, user charges (and cross-subsidies), private sector investment, aid (bilateral or multilateral), or a combination of some or all of these sources. As for private investment, Figure 3 shows that Brazil, Chile, China and Malaysia received the highest amount of private investment in the water supply sector from 2000 to 2005.¹⁰ These four countries also received a high level of aid. The total household connection rate was also relatively high, compared to other countries.

Figure 3: Aid (bilateral and multilateral) and private investment, total of 2000–2005



Sources: OECD database on aid (www.oecd.org/dataoecd/50/17/5037721.htm, accessed on 28 June 2007); World Bank private project investment database (<http://ppi.worldbank.org/>, accessed on 28 June 2007); WHO and UNICEF (2006).

We find that private sector investment generally goes to countries that have higher levels of connection rates. Only seven low-income countries managed to attract private investment for their water sector during the 1990–2005 period: India, Mozambique, Niger, Papua New Guinea, Senegal, Tanzania and Viet Nam. South Africa is the only other sub-Saharan African country that received private investment during the same period. In addition, aid and private flows go to the same group of countries. In other words, aid seems to attract private investment, and private investment flows to countries that reform their water sector.

Among the main reasons why so many developing countries decided to involve the private sector in water and other infrastructure are the influence and persuasiveness of international donors, and is the World Bank in particular. Apart from being the largest donor, it has the capacity to produce research that supports its policies.¹¹ As a result, the World Bank is able to shape the policy agenda of regional development banks, development agencies, donor countries and the academic community and, thus, can penetrate the decision-making machinery of a borrowing country.

¹⁰ During the period 1995–1999, the Philippines received the highest amount of private investment, followed by Chile and Argentina.

¹¹ See Evaluation of the World Bank Research (1998–2005) at <http://econ.worldbank.org/>, accessed on 22 January 2007.

The World Bank's *World Development Report* (1983) started the discussion on privatization through the policy of decentralization (privatization is a type of decentralization). In the 1990s, a plethora of reports on privatization were published. One of the main messages of the *World Development Report* in 1994 was that the private sector should be involved in management, financing and ownership of infrastructure to ensure commercial orientation of the sector (World Bank 1994:2). In 1995, the World Bank published a high-profile study of SOE reform in developing countries that expressed puzzlement at the slow pace of privatization and disappointment that "the bureaucrats" were still in business (World Bank 1995).

In 2002, after several years of increased interest by multinational companies, some of the major water companies started to withdraw from developing countries following a series of economic and financial crises, natural disasters, incidences of corruption, risky operating environments, miscalculation by the multinationals or non-compliance with contractual obligations. For example, Suez pulled back from Latin America and developing economies but remained in China, Veolia concentrated on Europe and China, SAUR focused its activities only in Europe and RWE withdrew from all markets except Germany and Central Europe (Owen 2006). Consequently, the number of people served by these multinationals declined from 349 million in 2004 to 296 million in 2006 (Owen 2006:15). At the same time, the World Bank was starting to doubt its own water privatization advice and doing some soul searching (*Wall Street Journal* 2003). In its evaluation, the World Bank recognized the difficulties associated with the private sector provision of water to the poor:

getting the private sector to focus on the alleviation of poverty and to design tariffs in a way that does not discriminate against the poor has proved hard to achieve in practice.¹²

The World Bank acknowledged its excessive focus on the private sector without recognizing the particularities of each country.¹³ Moreover, reforms such as increasing the efficiency of the public sector through privatization are more successful if the donor agencies better understand the local context and politics of the reforms (Bangura and Larbi 2006).

The evaluation also acknowledged that the private sector might not be able to bring in the additional investment required to increase coverage. In its progress report, the World Bank (2005a) further recognized that since the private sector would not be able to increase investment in infrastructure, public funding would continue to be important. Compared to the late 1980s and 1990s, the World Bank's infrastructure strategy has shifted from a reliance on the private sector to a mere encouragement of public-private partnerships. Similar conclusions were also drawn by Utting (2006) who argued that the World Bank is fine-tuning its orthodox policy of reliance on the market and is paying more consideration to social and environmental costs. In addition, civil society organizations have been stepping up pressure against government moves to apply market principles to public services (Ghimire 2005). After two decades of private sector involvement in the water and sanitation sector, one can observe increasing popular protests and a growing dissatisfaction of governments and investors (World Bank 2005b).

However, recent research shows that, while the rhetoric might be changing, the main thrust of PSP remains the same. Reliance on market mechanisms to solve water problems through PSP is still alive and well (Prasad 2006).

Poverty and Access: The Role of Social Policies and Investment

As regulation is often difficult in developing countries, it emerges that both public and private actors have important roles to play. However, the final responsibility lies with the state, and

¹² *Implementing the World Bank Group Infrastructure Action Plan*, 13 September 2003, p. 25.

¹³ See *Implementing the World Bank Group Infrastructure Action Plan*, 13 September 2003, p.5.

social policies are crucial to increasing coverage and ensuring that the poor are not excluded from the service.

Social policies in water supply

It is argued that the Romans were the first to manage drinking water as a priced commodity and to use social policies to guarantee universal access (Salzman 2006). For example, a special tax was levied on those who used pipes from the main system to their residences (the amount varied according to the size of the supply pipe nozzle). The tax funds were used to cover the cost of maintenance of the system. By this method, water for rich citizens was considered an economic good, whereas it was free of charge for the average citizen. Each depended on the other in the sense that piped water in private residences was priced as an economic good that, in turn, made it possible to fund and maintain public fountains.

Historically, the industrialized countries were concerned with increasing expansion of the water and sanitation systems, and many improvements in these sectors were directly linked to water sector legislation (Juuti and Katko 2005:220). Social policies have also been historically instrumental in bringing access to the vast majority of the population in developed countries. This has been the case of England, France and Wales. In the early 1800s, the London Bridge Waterworks Company practised a type of cross-subsidy for supplying water (an extra charge was levied on brewers, stablekeepers and tradesmen) (Hunter 1898:476). The public authorities were concerned that the poor would not be able to afford such services from the private sector and that some poor areas would not be supplied (Fletcher 1845:174–175). It was argued that the poor could be supplied only through a “public body”. The private sector was reluctant to supply water to the poor, except through the medium of the landlord or through a separate reservoir with intermittent supply. The rich had their own supplies, whereas the poor bought water from private vendors at high prices (two shillings per week, which was equivalent to their rent) or obtained it from rivers and wells (Sellers 1997).

Traditionally, the French state provided subsidies to the *syndicat d'eau* (water syndicate) to construct water systems, especially in rural areas. These subsidies were accorded within the framework of the Law on Public Health of 1902. They ranged from 50 to 80 per cent of total investment (Pezon and Petitet 2004) and the subsidy rate was a function of the total cost of construction, operation and the population size. For example, in 1939, access to piped water was almost universal in urban areas, but it was only 25 per cent in rural areas (Pezon 1999). Consequently, a special fund was created in 1954 aimed at increasing access to water in rural areas, the Fonds National pour le Développement des Adductions d’Eau (National Fund for the Development of Water Conveyances). Public fountains were cross-subsidized by individuals who wanted to have water connected in their residences, and also by industries. It should be noted that around 50 per cent of the total water networks in France were constructed between 1965 and 1980 (Pezon 1999).

Most of the developed economies have introduced social policies in order to deal with the problem of affordability. The most widespread forms of such social policies are income support (housing benefits, funds, charities, tariff rebates, flexible payments, vouchers) and tariff adjustment (increasing block tariffs, cross-subsidies, special tariffs for low-income households) (OECD 2003). The most popular form of social policy practised in developed and developing countries is increasing block tariffs. In Latin American countries, the first block represents 25 cubic metres per month (WHO advises that it should be between eight and 16 cubic metres) (ADERASA 2006). This implies that most residential consumers benefit from such tariffs. In addition, many countries practise social tariffs and subsidy schemes for poorer households. For example, Chile spends \$40 million per year on subsidies that benefit 600,000 people (20 per cent of the population); Colombia spends \$250 million per year for 30 million people (90 per cent of the population, which is considered quasi universal) of which 40 per cent is funded from internal surcharges; Argentina spends around \$10 million per year for 100,000 people (less than 1 per cent of the population); and Paraguay spends just \$0.1 million for around 5,000 people

(Foster and Yepes 2006). In general, social tariffs in Latin America offer a discount of around 67 per cent, compared to a normal tariff. However, these authors caution that certain subsidies disproportionately benefit the rich and the middle class.

In many countries, disconnection is not allowed since it is likely that those who are unable to pay regular water bills are the poor. Such policies exist, for example, in England and Wales. In certain countries that have involved the private sector in providing water services, social policies such as tariff structure and increasing coverage rates, especially to the poorer households, are incorporated in the contractual obligations. This has been the case in most developed countries where the private service provider is committed to implementing social policy objectives. Since developing countries desperately seek to attract foreign investment in the water sector, private companies often manage to obtain exemption from such obligations.

Public investment

As mentioned above, although historically the initial construction of the water supply network was often initiated by the private sector, water supply improvements did not take place until the state took full responsibility (increasing public investment and taking over the control from the private operators). The main concern of the public authorities was to make access universal, reduce the incidence of water-borne diseases and provide water for firefighting. Public investment increased as governments recognized the economic, social and political benefits of providing clean, safe and reliable water.

Historically, the funding of the large water supply infrastructure came in the form of “municipal bonds” like in New York City and private capital, for example, in Great Britain. In the early twentieth century, water works represented the largest component of municipal debt in American cities (Cutler and Miller 2005). However, even in the most prosperous Western cities, household connections were uneven, mainly favouring middle-class households. From the middle of the nineteenth century, private monopolies were replaced by public monopolies because the private companies were unwilling to extend coverage to poor neighbourhoods, improve quality or reduce excessive charges. At the time of writing, in the industrialized countries, public investment is important for building and maintaining infrastructure. For example, the United States has set up a revolving fund for municipalities to borrow from; 33 per cent of capital investment costs in Germany are financed by the central government; even in England and Wales—with fully privatized firms—9 per cent of capital investment comes from government subsidies; and in France, private companies are subsidized through a general taxation on consumers (Hall and Lobina 2006:22).

In developing countries, funds generally come from government tax revenues, user charges, cross-subsidies, private sector investment, contributions from non-governmental organizations, charity organizations, official development assistance, or a combination of some or all of these sources. The choice depends on who pays (cross-subsidy, national or international sources) and how it is financed (either through tax or user charges) and when (now or in the future) (World Development Movement 2006). State aid generally comes from taxation (similar to official development assistance). Funds from development banks (national, regional or international) come from taxation and from those who save. Those who save can finance investment costs (through loans, bonds or private equity investment). Loans from savers will be recouped from the users or the government.

Several estimates have been made in order to gauge the amount of investment required to achieve universal coverage in developing countries. A report published by the OECD showed that 0.35–1.2 per cent of gross domestic product (GDP) was required to finance, maintain and service the water supply networks in high-income countries; 0.54–2.60 per cent of GDP for middle-income countries; and 0.70–6.30 per cent of GDP for low-income countries (Ashley and Cashman 2006). A more conservative figure was shown in a World Bank study, which estimates the investment needs for 2005–2010 for developing countries to be around 0.5 per cent of GDP

(Fay and Yepes 2003). The United Nations Development Programme (UNDP) has indicated that 1.6 per cent of GDP is required to achieve target 10 of the Millennium Development Goals (UNDP 2006).

As mentioned above, there are considerable challenges in securing private funds for financing water infrastructure in developing countries. The municipalities that usually operate the water services do not have the capacity to acquire loans to finance their infrastructure. They do not have satisfactory credit ratings and, therefore, borrowing is very expensive (either by bank loans or debt issuance). Some of the municipalities are small, which renders them unattractive for private capital. However, there are some innovative approaches (such as pooling) that help decrease administrative costs and provide a more attractively sized bond.

The economic benefits of increasing access, as demonstrated by Chadwick in the mid-1800s, were recently estimated by WHO for the case of developing countries (Hutton et al. 2006). According to this estimate, every dollar invested in making water and sanitation coverage universal would result, on average, in a return of \$10.3 to developing countries. More precisely, a total of \$16.6 billion in investment is required, which would result in \$171 billion of economic benefits (time savings, productivity gains, health care cost saving). This would translate into 673 million fewer diarrhoea cases, resulting in around 600,000 fewer deaths, saving \$1.7 billion in health care costs, over \$200 million in non-medical costs such as food and transport, \$3.5 billion in the economic value of lost work days and \$7.3 billion as a result of lives saved.

Tariffs and distribution

Different social tariff models for water supply tend to have different distributional impacts. Social policy schemes are, in general, welfare enhancing: several developing countries have succeeded in reducing poverty through universal provision of social services like health care, education and water supply. However, most countries have both universal and targeted social policies since it is argued that even within universal policies, there is a possibility that the poorest may be excluded from accessing some services. Therefore, targeting would be necessary to make “universalism effective” (Mkandawire 2005:17).

UNRISD Research Findings

As academic literature alone does not give a clear answer on the superiority of either private or public provision, it might be insightful to look at some empirical evidence. Having contextualized the water services issues globally, we now look into our country studies to obtain a clearer picture.

We conducted seven case studies (Brazil, Burkina Faso, Colombia, Great Britain, France, Hungary and Malaysia) to analyse how the private sector impacts on the issues of access and affordability for the poor.¹⁴ We also looked at how social policies were designed and how effective they were at targeting those in need. Household data from selected countries and cities were used to analyse the issues related to access and affordability. The studies examined the debates surrounding PSP within the specific political, cultural and economic settings of each country. The selection of country studies was confirmed after a review of the literature and was based on several criteria. These included regional balance, geographic settings, level of economic development, level of poverty, types of PSP, degree of regulatory instruments in place, degree of problems in the water supply sector (level of access, availability/scarcity of water), degree of “success”, “failure” or “difficulty” in the service provision and availability of reliable data.

¹⁴ This research was a follow-up to the 2003–2004 UNRISD project, *Commercialization, Privatization and Universal Access to Water*, that included Argentina, Bolivia, Chile, Finland, India, the Philippines and South Africa.

The detailed country studies are available from the UNRISD Web site,¹⁵ and the revised versions will be published in an edited volume (Prasad forthcoming).

France

France has traditionally involved the private sector in distributing water. The private sector now supplies 80 per cent of the French population. This is one of the highest rates, compared to the worldwide average of around 10 per cent. The most widely used form of PSP is a concession contract, usually awarded for 10 to 30 years. According to the author of the French study, extending coverage to quasi-universal levels took one to two generations with a high level of subsidies from urban to rural areas (Reynaud 2007). In terms of affordability, Reynaud showed that in 2001 there were still 4.3 per cent of households in France (representing 1.16 million households) who spent over 3 per cent of their income on water bills.¹⁶ It is estimated that three million people are late in paying their water bills and around 700,000 households request a rescheduling of their bills.

Despite these affordability problems, there is currently no explicit pricing scheme, rebate or discount tariff for the poorest households in France. Instead, the mechanism put in place by the public authorities is similar to ex-post financial aid designed to help qualified low-income households pay their water bills.¹⁷ The main reason for this approach is that, according to the French definition of a public service, all customers with similar characteristics must contend with the same price (different pricing systems are, therefore, “illegal”).¹⁸ The prominent size of the private sector (and the lobby against such social tariffs) might also constitute a plausible explanation for the ex-post choice.

During the past two decades, water prices increased twice as fast as the consumer price index. In addition, water tariffs are 33 per cent higher in areas where the private sector operates, compared to the regions supplied by the public companies. Although the marginal cost and marginal price are not very different, the private companies tend to have a high fixed charge in order to secure their revenues. Reynaud (2007) concluded by saying that the private sector has negatively impacted the poor and that ex-post financial assistance has not succeeded in solving their affordability problems.

Great Britain

Studying the water sector in Great Britain is instructive and fascinating for two reasons. First, in the early nineteenth century, Great Britain was a pioneer of private sector provision of water services. Later, ownership reverted to public provision. Since the middle of the nineteenth century, government policy makers have given priority to providing every household with access to treated piped water, regardless of geographical location, social class or income. By the early twentieth century, this had been achieved for the vast majority of urban residents (and by the mid-twentieth century for most of the rural areas). This was accomplished through an extensive, and costly, system of cross-subsidies.

And, second, it is interesting to investigate the British model of unprecedented full-scale privatization since 1989. The authors of the study on Great Britain argued that one of the reasons for privatization was the belief that the private sector could deliver services in more efficient and effective ways than the public sector, provided there was appropriate economic regulation (Sawkins and Dickie 2007). Hence, an independent economic regulator – the Office of

¹⁵ See www.unrisd.org.

¹⁶ Although still subject to debate, there is an international norm that expenditure on water should not exceed 3–5 per cent of total household expenditure (or, in the absence of expenditure data, 3 per cent of household income).

¹⁷ For example, a specific fund was created to help low-income households who cannot pay their bills (by writing off water debts).

¹⁸ The last regulation, Water Law No. 2006–1772, promulgated on 30 December 2006, has, however, recognized the right of all users to benefit from water at an economically acceptable cost. This was a first step toward implementation of social water pricing.

Water Services (Ofwat)¹⁹—was established. Sawkins and Dickie demonstrated that with this transformation there was a shift in government policy, and more emphasis was given to economic efficiency such as cost recovery and dismantling of certain social policies (for example, cross-subsidies). They also argued that changes in policy did not detrimentally impinge upon the underlying principle of universal access. However, with the arrival of the Labour government in 1997, there was a move toward reprioritizing social over economic equity, as demonstrated by the prohibition of domestic disconnection for non-payment and a ban on the use of limiting devices (for example, trickle valves). The authors provided a detailed analysis of such policies and how the government tried to influence Ofwat to take up some social obligations.

What were the effects on affordability in the aftermath of privatization? Data reveal, for example, that in 1988 the poorest spent 3.5 per cent of their gross household income on water bills, compared to 0.4 per cent for the richest. This figure increased for the poorest in 1991 but remained unchanged for the richest, that is, the poorest bore most of the burden. In 1997, the poorest were still spending 4 per cent of gross household income for water and sewerage charges, whereas the richest spent only 0.5 per cent. The 2002–2003 figures show that this burden for the poorest had started to decrease, whereas it increased for the middle class. In addition, problems related to water debt have also been increasing since 2003. After comparing England and Wales with Scotland, Sawkins and Dickie concluded that there is no marked difference between a private and a public delivery of service and that the poor do not seem to be more or less affected by either model. However, with public management in Scotland, there is more emphasis given to social equity concerns. Indeed, effective regulation (an independent economic regulatory body)²⁰ and appropriate social policies seem to cushion the adverse effects of privatization.

Colombia

As a result of poor management and lack of sufficient capital, the World Bank proposed privatization of the water services in many Latin American countries. PSP in Colombia's water sector is representative of developments observed in other Latin American countries. These experiences were often controversial and fraught by failures of different kinds. The two well-known cases are Cartagena (privatized services) and Bogota (refusing privatization). The authors of the Colombian study showed that significant participation through management or concession contracts is relatively recent in this country, as it started only in 1994 (Gómez-Lobo and Meléndez 2007).

Data on access show that only around 68 per cent of the poorest had access to piped water, compared to around 96 per cent of the richest. However, the lack of access is almost exclusively a problem for the rural poor, for which the connection rate is still less than 50 per cent. As expected, the poorest paid more in terms of their share of expenditure on water bills: 0.05 per cent compared to 0.01 per cent for the richest (this figure remained unchanged between 1997 and 2003).

Gómez-Lobo and Meléndez (2007:17) demonstrated that PSP tends to have a neutral to positive effect on access, especially for the poor, and a neutral impact on affordability. They argued that the generous subsidy scheme cushions the potential negative impact of PSP. The subsidy scheme is financed by the higher income and business sector groups, national and local governments and a special “solidarity and income distribution fund” that was designed as a cross-subsidy scheme for the poorer regions. The subsidy is based on the socioeconomic stratification of dwellings. The authors showed that over 80 per cent of households are

¹⁹ Ofwat is a non-ministerial government department and, therefore, not subject to direction from ministers. It is accountable to Parliament, provides evidence for Parliamentary Select Committees and provides an annual report to the secretary of state and the first minister of Wales.

²⁰ The economic regulator is expected to regulate by using a price cap mechanism with periodic reviews every five years. In setting price caps, Ofwat's primary duty is to ensure that the companies are able to finance their functions, in particular, by securing a reasonable rate of return on their capital.

classified in the first three groups that are eligible for subsidies. As such, it is more akin to a universal subsidy scheme than a focused social programme. The main policy conclusion to emerge from this study is that in the presence of appropriate social policies, PSP does not necessarily imply negative impacts on the welfare of poorer households.

Brazil

PSP in Brazil is still in its infancy since only 2 per cent of water companies are in private hands. However, in terms of population supplied by private sector service, Brazil comes second (25 per cent) in Latin America after Chile (Owen 2006). De Oliveira (2007) presented an in-depth analysis of the sector's development since the 1960s and showed how the government managed to increase coverage from 60 per cent in 1970 to 86 per cent in 1990. He argued that this was achieved by heavy public investments, especially through two institutions: the National Housing Bank and the National Sanitation Plan. This led to the emergence of regional (state) companies, which still hold concessions from municipalities. Following the dismantling of these institutions in the late 1980s (due to economic crisis), the country has been struggling to develop a coherent water policy. There is confusion as to which agencies (municipalities or the federal/state government) have the right to grant concessions. After much discussion, a new bill was passed in 2007 that allowed the municipalities and states to access federal financing and established a council, including civil society, to influence tariff setting and termination of service. However, it fell short of defining the authority in according concessions.

De Oliveira presented some of the social policies that were put in place to increase access to water for the poor in the 1990s and argued that all of these policies gave more priority to access rather than to issues of affordability. He showed that only 52 per cent of the poorest households had access to water supply in 1995, compared to nearly 100 per cent for the richest. This figure increased to 68 per cent in 2003 for the poorest. This increase was mainly due to the heavy public investments mentioned above and by imposing upon private operators to invest. However, 45 million Brazilians still did not have access to water supply. The author provided some evidence that private companies are mainly present in areas with higher coverage rates; the productivity is higher with these companies; they invest less and tend to have higher tariffs. In terms of affordability, the study showed that water and sewage bills are much more burdensome for low-income families than high-income families. The poorest spent around 1.4 per cent of their income on water bills, compared to only 0.3 per cent for the richest. The affordability problem is generally dealt with by the tariff structure and all companies (public or private) practise social tariffs such as increasing block tariff and use other ex-post measures designed to help poor households.

Malaysia

Malaysia started PSP in the water sector, mainly through build-operate-transfer models, in the early 1990s. This has been changing in favour of concession-type contracts granted for longer periods. The private sector currently supplies water to 64 per cent of the population of the country. This figure is among the highest in the Asia-Pacific region (Owen 2006). One particularity of the country's water sector is that, apart from the big multinational companies, local firms have also been very active in the market, with ambitions to expand beyond national territory (for example, to China, Indonesia and Thailand).

Lee (2007) argued that the development of the water sector in Malaysia has been fairly uneven, with the more developed states achieving almost universal coverage, while the less developed states continue to have great difficulties in increasing access, particularly in the rural areas. He also showed that the more developed states tend to attract PSP, while those that are poor have public provision of water supply. Lee's study shows that only 56 per cent of the poorest had access to water in 1994, compared to 94 per cent for the richest. These figures changed to 74 per cent and 96 per cent, respectively, in 1999. Water affordability for the households with lower income worsened during the same period. On the other hand, the affordability for the richer households improved. In 1999, the poorest spent 1.5 per cent of their income on water,

compared to 0.7 per cent for the richest. Social policies such as lifeline consumption rate, cross-subsidy (from industrial to domestic consumers) and increasing block tariff are implemented to address the concerns for the poor households. The author showed that there is a general trend toward reducing water subsidies.

Lee found that privatization does not seem to have improved access to water. As illustrated by the Kelantan case, water privatization in Malaysia has not always been successful. In other words, PSP has not brought in additional investments to increase coverage, nor has it increased efficiency. He showed that most of the companies are highly deficient since they are not able to recover their operating costs. The main reason for this weak financial performance is the loss of revenue from non-revenue waters, primarily through leakage (but this is lower where the private sector is operating the system). However, because of strict policies and political sensitivity regarding tariff increase, there does not seem to be an association between PSP and higher tariffs. But privatized states do tend to revise tariffs (upwards).

Hungary

Hungary is representative of what is taking place in other transition economies, where large-scale privatization started after the regime change in the early 1990s. Within the privatization wave (and without much public debate), the water sector was reformed, with the ownership first being transferred to the municipalities and then to the private sector. Boda et al. (2007) reiterated that an overall privatization of the assets was prohibited by law. However, partial privatization took place and was combined with long-term management rights given to private companies. At the time of writing, about 40 per cent of the water was distributed by private companies/joint ventures and about 20 per cent of the water companies were privatized.

Although piped water is available to almost all residential areas, connection is still not universal. By disaggregating data, Boda et al. (2007) showed that 20 per cent of the poorest still do not have access to piped water (this has remained relatively unchanged since 1992). The authors argued that if people are not connected, it is not because of physical, but rather financial constraints and, therefore, the issue of access can be redefined as an affordability question. In general, there does not seem to be an affordability problem (most of the households paid less than 3 per cent of their income on water bills), but the proportion of expenditure on water bills paid by the poorest increased from 1.1 to 1.5 per cent during the period of 1992–2003.

The authors argued that the specific social policies put in place in the country include keeping the tariffs low (which does not reflect investment and depreciation costs), providing state subsidies and assistance (maintenance or debt relief) by local governments and the existence of regional cross-subsidies. The prices are deliberately kept low for political reasons because, in the socialist era, water services were free of charge. As a result of this scheme, investments cannot be imposed on the companies but instead fall under the responsibility of the municipality (backed by state subsidies and European Union funding). Another consequence is that the water tariffs are between 5 and 90 per cent lower than the actual cost of production and this benefits both the rich and the poor (universal social policy).²¹

In terms of the differences between public and private provision, Boda et al. (2007) found that the rate of price increases is slightly higher in the private companies that were compared, but PSP did not lead to price increases. This was due to strict political control of prices (as discussed above) or to the practices of the water companies that seek compensation from fixed management fees, increasing efficiency, or by choosing regions with low production costs (cherry picking). Overall, the authors found that although the private water companies

²¹ However, there is a concern that the national-level social policy scheme in the form of reduced price and cross-subsidy is contrary to the European Union guidelines on the water framework directive. These guidelines emphasize that the operator should cover the cost of water. This would likely lead to a price increase in Hungary and the targeted assistance at the local level would probably be enhanced.

(especially multinational corporations) have been successful in increasing efficiency (productivity) without increasing investment, this did not result in lowering the tariffs.

Burkina Faso

Burkina Faso is one of the poorest countries in the world and is confronted with major development challenges. This country study sought to shed light on the challenges facing the water sector in conditions where less than half of the people had access to safe drinking water. The other half either buys water from private vendors at exorbitant prices or consumes unsafe water from rivers and other sources. In other words, there are three groups of private actors in the water services: private firms, fountain managers and private vendors who sell water to individual domiciles. Kouanda and Moudassir (2007) started their discussion on Burkina Faso by emphasizing that it is a landlocked country that endures extreme climatic conditions. Reform of the Burkinabe water sector started in the mid-1990s with loans from the World Bank. Cautious about the country's ability to respect its financial obligations, the lenders set privatization of the public water company as a condition, as they had done with other developing countries. A compromise was reached in the form of a service contract with a multinational water company—Veolia—in 2001. The objective of this partnership was to operate the company on a commercial basis, improve access and increase the efficiency of water services.

The study shows that the share of population with access to safe drinking water has been constantly increasing, from 43 per cent in 1994 to 52 per cent in 1998 to 61 per cent in 2003, benefiting all income groups. In addition, the time spent on fetching water has decreased as a result of putting more water fountains to use. Kouanda and Moudassir (2007) presented a detailed account of how private management has sought to prioritize economic efficiency to the detriment of social objectives—for example, increasing tariffs, dismantling of social policies, privileging larger consumers and decreasing the level of lifeline consumption. As a result, the share of expenditure used for water increased for the poorest quintile, but decreased for the richest income groups. The fact that the number of poor people using more than 3 per cent of their income on water has increased also illustrates this point. Moreover, the authors cautioned that the poorest are often not connected to the network and, therefore, have to purchase water from private vendors.

The authors concluded that although coverage seems to have increased for all groups and efficiency has improved, the commercialization objective pursued by the private sector has been detrimental in terms of affordability, especially to the poorest populations.

Policy Implications: Social Policies Are Instrumental

All of these country studies show the shortcomings of PSP in terms of access and affordability. Increased coverage comes from increased investment or increased efficiency (increasing productivity, organizational restructuring and rationalization, reducing leakages and more efficient collection of tariffs). The private sector does not necessarily invest more. And though the private sector tends to be more efficient (Burkina Faso, Hungary and Malaysia), this efficiency does not seem to translate into lower tariffs. On the contrary, evidence shows that the private sector has higher tariffs (Burkina Faso, Colombia and France). Our studies show that affordability is a major issue in most countries. In all of the countries, it is demonstrated that the poor are disproportionately affected. Governments try to neutralize this by designing various social policies such as cross-subsidies, public subsidies, increasing block tariff, lifeline consumption, ex-post assistance and by deliberately keeping tariffs low.

The choice of social policies varies from country to country. In the two developed countries (France and Great Britain), heavy public investment was used to ensure that everyone had access to piped water. In these countries, even with high regulatory capacity, social policies in

the water sector have been crucial. For example, in France, they predominantly consist of ex-post assistance to those who cannot afford to pay water bills, operating a fund for rural water supply and prohibition of disconnection. British social policies include income support based on property values, subsidies, a ban on disconnections, various forms of social security support and social assistance in paying water bills. In addition, there exists an effective and independent economic regulatory body.

In the case of Colombia, our findings suggest that it is the subsidy that helps the poor to have access to affordable water. In addition, investment commitments prescribed to the private sector have been useful in increasing coverage. Similarly, in Brazil, the desire to make water supply universal led to heavy investment in the 1970s, and effective social policies (cross-subsidies) helped to increase coverage to the poor. However, the current impasse on who has the right to grant concessions (the state or municipality) to the private sector is jeopardizing further progress. The government in Hungary provides subsidies to the regions that have high production costs. In addition, industrial users cross-subsidize domestic consumption, and income transfers by central or local authorities shoulder some of the burden of households' water expenditures. Tariffs are kept low ("hidden" social policy) and no disconnection is allowed for non-payment of bills. The private sector has increased efficiency in the system, but investment is financed by the state. In Malaysia, the social policies in place comprise state financing of water supply in rural areas, cross-subsidy (industrial users to domestic) and a lifeline block tariff. In addition, the private sector is contractually obliged to increase coverage in urban and rural areas. In Burkina Faso, although the efficiency of the network has substantially improved with commercialization through PSP, there is pressure to dismantle social policies.

Conclusion

The results of our research are consistent with other research findings.²² Increasing coverage requires many things, and investment is one of the key inputs. As has been seen, the private sector can, and often does, assume a critical role in the provision and operation of water supply. However, loans have to be recovered from the users or from the government. One water specialist put it bluntly: "Whatever the purists say, water services need to be able to cover their operating costs and to finance debt" (Owen 2006:28). In the countries that cannot service loan repayments, the private sector does not provide a new source of financing. Financing water facilities is unappealing to private investors for reasons such as the "lumpiness" of necessary investments, long payback periods (of 20 years or more) and the political difficulties inherent in charging and collecting cost-recovering tariffs. Ironically, it is the developing countries that need the most assistance in terms of their investment requirements. And yet the private sector finds these countries difficult: they are, to quote Owen (2006:23), the most "aggressively challenged markets". As discussed above, water projects are risky compared to other forms of capital-intensive projects. In such circumstances, there is no need to be overly optimistic that the private sector will solve the water supply problem. One of the leading experts on privatization rightly pointed out that operating a water business that is profitable for the service providers and affordable to consumers, especially the poor, is extremely difficult because of the huge capital investment requirements (Megginson 2005:399-400).

As discussed above, it is ultimately the public authorities that can make a difference in terms of providing the adequate social policy framework and mobilizing investments. Expenditure in water supply would be more effective in increasing coverage rather than creating regulatory bodies. Increased coverage will benefit the poor the *most* since they are not connected to piped water sources, and they have to pay more in order to obtain water from alternative sources. Improved coverage will also save them time (spent on fetching water) and could drastically improve their health (since they will have access to better quality of water).

²² For a literature review on PSP and its results, see Prasad (2006).

Our results—growing failures of large-scale privatization and increasing public pressure against privatization—show that there is a need to rethink the PSP strategy in water supply. PSP in the water sector was oversold during the 1990s without realizing the challenges of such policy reforms. In this context, Haq (1995:140) argued that the development pendulum is swinging from reliance on the public sector to an overenthusiasm for private provision, and he fears that this pendulum may swing too far. In other words, one should be more cautious about private sector involvement in the water sector.

In sum, theory and evidence show the ambiguities of PSP in the water sector. The political economy of water is such that any benevolent reform can lead to an impasse if social policies are neglected. Our country studies, together with a historical perspective, show that any reform intending to increase coverage (either through commercialization, PSP, additional investment or increasing efficiency) should be accompanied by the appropriate social policies. These policies should also be able to address the issues of access and affordability, especially for the poor.

Bibliography

- Ait-Ouyahia, M. 2006. *Public-Private Partnerships for Funding Municipal Drinking Water Infrastructure: What are the Challenges?* Policy Research Initiative, Government of Canada, Ottawa.
- Amann, E. 2006. *Regulating Development: Evidence from Africa and Latin America*. Edward Elgar, Cheltenham.
- Anand, P.B. 2007a. "Right to water and access to water: An assessment." *Journal of International Development*, Vol. 19, pp. 511–526.
- . 2007b. *Scarcity, Entitlements and the Economics of Water in Developing Countries*. Edward Elgar, Cheltenham.
- Ashley, R. and A. Cashman. 2006. "The impacts of change on the long-term future demand for water sector infrastructure." In OECD (ed.), *Infrastructure to 2030: Telecom, Land Transport, Water and Electricity*. OECD, Paris.
- Asociación de Entes Reguladores de Agua Potable y Saneamiento de las Américas (Association of Water and Sanitation Regulatory Entities of the Americas/ADERASA). 2006. *Las tarifas de agua potable y alcantarillado en América Latina*. www.aderasa.org, accessed on 28 June 2007.
- Baldwin, R., C. Scott and C. Hood. 1998. *A Reader on Regulation*. Oxford University Press, New York.
- Ballance, T. and A. Taylor. 2005. *Competition and Economic Regulation in Water: The Future of the European Water Industry*. IWA Publishing, London.
- Bangura, Y. and G. Larbi (eds.) 2006. *Public Sector Reform in Developing Countries: Capacity Challenges to Improve Services*. UNRISD, Geneva, and Palgrave Macmillan, Basingstoke.
- Breyer, H. 2006. Mortality, *Morbidity and Improvements in Water and Sanitation: Some Lessons from English History*. Occasional Paper, Human Development Report 2006. Human Development Report Office, UNDP, New York.
- Buchanan, J.M. 1972. *Theory of Public Choice*. University of Michigan Press, Ann Arbor.
- Chadwick, E. 1842. *Report ... from the Poor Law Commissioners on an Inquiry into the Sanitary Conditions of the Labouring Population of Great Britain*. London.
- Cook, P. and S. Mosedale. 2007. *Regulation, Markets and Poverty*. Edward Elgar, Cheltenham.
- Cutler, D. and G. Miller. 2005. *Water, Water, Everywhere: Municipal Finance and Water Supply in American Cities*. National Bureau of Economic Research, Cambridge, MA.
- Davis, J. 2005. "Private sector participation in the water and sanitation sector." *Annual Review of Environment and Resources*, Vol. 30, pp. 145–183.
- Drucker P. 1970. *A New Style of Government*. Conservative Party Centre, London.
- . 1968. *The Age of Discontinuity. Guidelines to Our Changing Society*. Transaction Books, New Brunswick, NJ.
- Fay, M. and T. Yepes. 2003. *Investing in Infrastructure: What is Needed from 2000 to 2010?* Policy Research Working Paper No. 3102. World Bank, Washington, DC.
- Fletcher, J. 1845. "Historical and statistical account of the present system of supplying the Metropolis with water." *Journal of the Statistical Society of London*, Vol. 8, No. 2, pp. 148–181.
- Foster, V. and T. Yepes. 2006. *Is Cost Recovery a Feasible Objective for Water and Electricity? The Latin American Experience*. Working Paper No. 3943, World Bank, Washington, DC.
- Gandy, M. 2006. *Water, Sanitation and the Modern City: Colonial and Post-Colonial Experiences in Lagos and Mumbai*. Occasional Paper No. 2006/6, Human Development Report 2006. Human Development Report Office, UNDP, New York.
- Ghimire, K.B. 2005. *Civil Society and the Market Question: Dynamics of Rural Development and Popular Mobilization*. UNRISD, Geneva, and Palgrave Macmillan, Basingstoke.
- Hall, D. 2001. *Water in Public Hands*. Public Services International Research Unit, London. www.psiru.org, accessed on 12 April 2007.
- Hall, D. and E. Lobina. 2006. *Water as a Public Service*. Public Services International Research Unit, London.
- Haq, M. 1995. *Reflections on Human Development*. Oxford University Press, New York.
- Hunter, W. 1898. "London water supply." *Journal of the Society of Arts*, Vol. 47, No. 2422, pp. 475–494.

- Hutton, G., L. Haller and J. Bartram. 2006. *Economic and Health Effects of Increasing Coverage of Low Cost Water and Sanitation Interventions*. Occasional Paper No. 2006/33, Human Development Report 2006. Human Development Report Office, UNDP, New York.
- Jalilian, H., C. Kirkpatrick and D. Parker. 2007. "The impact of regulation on economic growth in developing countries: A cross-country analysis." *World Development*, Vol. 35, No. 1, pp. 87–103.
- Juuti, P.S. and T.S. Katko (eds.). 2005. *Water, Time and European Cities: History Matters for the Futures*. WaterTime Project, European Commission, Brussels.
www.watertime.net/Docs/WP3/WTEC.pdf, accessed in April 2007.
- Kessides, I.N. 2004. *Reforming Infrastructure: Privatization, Regulation and Competition*. World Bank, Washington, DC, and Oxford University Press, New York.
- Kirkpatrick, C. and D. Parker. 2004. "Regulatory impact assessment and regulatory governance in developing countries." *Public Administration and Development*, Vol. 24, No. 4, pp. 333–344.
- Laffont, J.J. 2000. *Incentives and Political Economy*. Oxford University Press, New York.
- Meggison, W.L. 2005. *The Financial Economics of Privatization*. Oxford University Press, New York.
- Meggison, W.L. and J. Netter. 2001. "From state to market: A survey of empirical studies on privatization." *Journal of Economic Literature*, Vol. 39, No. 2, p. 321.
- Minogue, M. 2005. "Apples and oranges: Problems in the analysis of comparative regulatory governance." *Quarterly Review of Economics and Finance*, Vol. 45, No. 2–3, p. 195.
- Minogue, M. and L. Carino. 2006. *Regulatory Governance in Developing Countries*. Edward Elgar, Cheltenham.
- Mkandawire, T. 2005. *Targeting and Universalism in Poverty Reduction*. Programme on Social Policy and Development, Paper No. 23. UNRISD, Geneva.
- Mohajeri, S., B. Knothe, D-N. Lamothe and J-A. Faby. 2003. *Aqualibrium: European Water Management between Regulation and Competition*. European Commission, Brussels.
- Newbery, D.M.G. 1999. *Privatization, Restructuring and Regulation of Network Utilities*. MIT Press, Cambridge, MA.
- Organisation for Economic Co-operation and Development (OECD). 2003. *Social Issues in the Provision and Pricing of Water Services*. OECD, Paris.
- Owen, D.L. 2006. *Pinsent Masons Water Yearbook, 2006–2007*. Masons Solicitors, London.
- Parker, D. 1999. "Regulation of privatised public utilities in the UK: Performance and governance." *International Journal of Public Sector Management*, Vol. 12, No. 3, pp. 213–235.
- Pezon, C. 1999. *La gestion du service d'eau potable en France de 1850 à 1995*. Thèses sciences de gestion, Conservatoire National des Arts et Métiers, Paris.
- Pezon, C. and S. Petitot. 2004. *L'intercommunalité en France de 1890 à 1999, la distribution d'eau potable en question, Arras, communication à la Journée d'études "Les territoires de l'eau"*. Université d'Arras, Arras.
- Prasad, N. Forthcoming. *Beyond Regulation: Social Policies and Private Sector Participation in Water Supply*. Palgrave Macmillan, Basingstoke, and UNRISD, Geneva.
- . 2006. "Privatisation results: Private sector participation in water services after 15 years." *Development Policy Review*, Vol. 24, No. 6, pp. 669–692.
- Salzman, J. 2006. "Thirst: A short history of drinking water." *Yale Journal of Law and the Humanities*, Vol. 17, pp. 94–121.
- Sellers, D. 1997. *Hidden Beneath Our Feet: The Story of Sewerage in Leeds*. Leeds City Council, Leeds.
- Stiglitz, J. 1998. "The private uses of public interests: Incentives and institutions." *The Journal of Economic Perspectives*, Vol. 12, No. 2, pp. 3–22.
- Ugaz, C. 2006. *Commercilization, Privatization and Universal Access to Water*. UNRISD, Geneva. Mimeo.
- United Nations Development Programme (UNDP). 2006. *Beyond Scarcity: Power, Poverty and the Global Water Crisis*. Human Development Report 2006. Human Development Report Office, UNDP, Palgrave Macmillan, New York.
- United Nations Research Institute for Social Development (UNRISD). 2006. *Transformative Social Policy: Lessons from UNRISD Research*. Research and Policy Brief No. 5, UNRISD, Geneva.
- Utting, P. (ed.). 2006. *Reclaiming Development Agendas: Knowledge, Power and International Policy Making*. UNRISD, Geneva, and Palgrave Macmillan, New York.
- Vickers, J. and G. Yarrow. 1988. *Privatization: An Economic Analysis*. MIT Press, Cambridge, MA.

- Wall Street Journal. 2003. "The World Bank as privatization agnostic", 21 July.
- Wingate, C.F. 1883. "The water-supply of cities." *North American Review*, Vol. 136, pp. 364–374.
- World Bank. 2006. *Handbook for Evaluating Infrastructure Regulatory Systems*. World Bank, Washington, DC.
- . 2005a. *Infrastructure and the World Bank: A Progress Report, Development Committee*. World Bank, Washington, DC.
- . 2005b. *Infrastructure Development: The Roles of the Public and Private Sectors, World Bank Group's Approach to Supporting Investments in Infrastructure*. World Bank, Washington, DC.
- . 1995. *Bureaucrats in Business: The Economics and Politics of Government Ownership*. Oxford University Press, New York.
- . 1994. *World Development Report 1994: Infrastructure for Development*. Oxford University Press, New York.
- . 1993. *Water Resources Management*. Policy Paper, World Bank, Washington, DC.
- . 1983. *World Development Report 1983*. Oxford University Press, New York.
- World Development Movement. 2006. *Piped Dreams: The Failure of the Private Sector to Invest in Water Services in Developing Countries*. World Development Movement, London.
- World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2006. *Meeting the MGD Drinking Water and Sanitation Target*. WHO, Geneva, and UNICEF, New York. www.who.int/water_sanitation_health/monitoring/jmp2006/en/index.html, accessed on 12 April 2007.

Background papers

- Boda, Z., G. Scheiring, E. Lobina and D. Hall. 2007. *Social Policies and Private Sector Participation in Water Supply—The Case of Hungary*. Programme on Markets, Business and Regulation, UNRISD, Geneva.
- De Oliveira, A.R. 2007. *Social Policies and Private Sector Participation in Water Supply—The Case of Brazil*. Programme on Markets, Business and Regulation, UNRISD, Geneva.
- Gómez-Lobo, A. and M. Meléndez. 2007. *Social Policies and Private Sector Participation in Water Supply—The Case of Colombia*. Programme on Markets, Business and Regulation, UNRISD, Geneva.
- Kouanda, I. and M. Moudassir. 2007. *Social Policies and Private Sector Participation in Water Supply—The Case of Burkina Faso*. Programme on Markets, Business and Regulation, UNRISD, Geneva.
- Lee, C. 2007. *Social Policies and Private Sector Participation in Water Supply—The Case of Malaysia*. Programme on Markets, Business and Regulation, UNRISD, Geneva.
- Reynaud, A. 2007. *Social Policies and Private Sector Participation in Water Supply—The Case of France*. Programme on Markets, Business and Regulation, UNRISD, Geneva.
- Sawkins, J. and V. Dickie. 2007. *Social Policies and Private Sector Participation in Water Supply—The Case of Great Britain*. Programme on Markets, Business and Regulation, UNRISD, Geneva.

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