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Social Policy, Regulation and Private Sector Involvement in Water Supply

Addressing Issues of Equity, Access and Affordability

Naren Prasad, UNRISD

Issues Paper and Research Proposal
prepared for the UNRISD Project on Social Policy, Regulation
and Private Sector Involvement in Water Supply

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Issues Paper and Research Proposal

Social Policy, Regulation and Private Sector Involvement in Water Supply

Addressing Issues of Equity, Access and Affordability

Naren Prasad¹
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¹ Elise Guélat provided valuable assistance in finalizing the project document.

Abstract

This research project intends to investigate how the private sector involvement in water supply deals with poverty issues in terms of access, equity and affordability. It will explore the various social policies and regulation that are intended to help the poor. This research will also investigate the nature of regulatory mechanisms in place and their results. For issues of access and affordability, household data from selected countries and cities as case studies will be used for this investigation. The data (disaggregated in income groups and household expenditure) will also be used in a cross sectional analysis. This paper sets out the context in which this research project will be carried out. It also defines the scope of the research, and develops a methodology needed to undertake this research.

Introduction

It is a well-recognized fact that better public utilities infrastructure (water, roads, telecommunications, port, airport, electricity, etc.) leads to better economic performance. In order to better develop their infrastructure countries have different models in place in terms of the degree of private-public sector involvement for such services. Public utilities infrastructure, especially water, is are unavoidably social in nature and draws such political emotions, like no other issue. Even though water is one of the most crucial elements of life, it has been supplied by the private sector in many parts of the world. Can the private sector guarantee equal access to water to everyone with affordable prices in spite of its profit seeking motives? Can the commercial objectives of the private sector adapted to meet the social needs? This research will explore to what extent the neo-liberal project, imposed by some international and bilateral agencies that developing countries “privatize”² their water supply services is a valid policy as far as outcomes are concerned? The neo-liberal strategies mainly emphasizes on the importance of the market, fiscal discipline, trade, investment and financial liberalization, deregulation, decentralization, privatization and a reduced role of state (Robison and Hewison 2005, p. 185). Certain other strategies such as a limited welfare state, flexible labour market, and restrictive fiscal policies have been given priority over social policies. These strategies are also referred to as the *Washington Consensus*³. Private sector involvement was introduced in developing countries as the linchpin of the Washington Consensus.

It is widely recognized that *social policies* are one of the key elements of development policy thinking in promoting pro-poor development. As a specific case, if social policies in the water supply are well designed, they could help in achieving the environmental, economic and social objectives. However, there are disagreements on which policies are most appropriate and how best to implement such policies. Based on our knowledge and literature review, there seems to be hardly any serious empirical studies done to investigate whether the private sector has increased coverage to the poor, or what impact does it has on the poor in terms of affordability and equity.

This research project intends to fill this gap. This concept paper has the aim of presenting a state of the art picture of water supply and sanitation in developing countries. After reviewing literature, some basic statistics on the private sector involvement in water will be presented. Historically, although private sector has been involved in delivering services in some developed countries, the results have not been satisfying. In addition, experiences from developing countries shows that most of the privatization projects are in difficulties and some of them are cancelled. This research project will investigate whether the private sector involvement is the right solution for water problems in developing countries. How can the private sector deal with issues

² Private sector involvement or privatization here refers to all forms of private sector involvement that has commercial objective of making profit.

³ John Williamson (1994) was the first to coin this term, referring to the orthodox economic policies promoted by the US Treasury, the International Financial Institutions, IMF and the World Bank (all based in Washington). It should be reminded that he argued that neo-liberalism should not be synonym for Washington Consensus. However Kanbur (1999) demonstrated that despite its original purpose, critics of Washington Consensus judged what they saw in reality.

of poverty and equity, which include access and affordability. Appropriate social policies may be needed to address these problems. A research agenda is proposed to demonstrate what social policies are most appropriate concerning issues of equity and access. This paper will set out the *context* in which this research project will be carried out. It will also define the *scope* of the research, and will develop the *methodology* needed to undertake this research. It should be reminded at this point, that for any economic reform to achieve its purpose of increasing social and economic welfare to its people, first we need to understand the *theoretical foundations* on which these reforms are based. Secondly, we also need to understand the *local capacity* for undertaking and implementing such reforms.

Current context

Private sector involvement in water is one of the most controversial debates of the development discourse today. On one side are the proponents who argue that since government has failed in providing access to everyone, private sector can solve this problem by using the market principles. Those who advocate the involvement of private sector in water supply (IFIs, bilateral donors, OECD countries, TNCs, professional association and some scholars) argue that private sector will improve efficiency, increase extension of service, bring in more investments, and will relieve governments from budget deficits. It has been argued that because of lack of funding to improve the water infrastructure, developing countries are caught into the “*low-level equilibrium*”, implying low operational efficiency leads to low quality service (Anwander and Ozuna 2002). International development agencies such as the World Bank, regional development banks (Inter-American Development Bank, Asian Development Bank, African Development Bank), and other bilateral donors argue that to break this trap, private sector participation is the solution.

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 unlike any other resource and because of the fact that water is the essence of life itself, it should *not* be treated like a commodity based on market principles. The private sector cannot apply a just criteria for this basic need. Access to water for everyone then becomes a human right and it is the State’s obligation to provide this vital resource to everyone. This notion of human right goes back to the Enlightenment era where Hobbes (1588-1679) and Locke (1632-1704) had argued that it is the obligation of the State to uphold, protect, promote and enforce rights. But does the State have the capacity to deliver this service to everyone?

And then there is another group who are caught in between these two opposing views. This groups thinks that solutions can be found by considering water as an economic good and a human right at the same right. The truth may be found somewhere here. It is important to set the context in which these debates take place.

The neo-liberals⁴ who believe in free market principles to solve the problem of water have been gaining grounds since the 1970s. This neo-liberal position was given life during the Thatcher and Reagan era (1980s), which was later propelled through the so-called *Washington Consensus* which argued that private sector involvement in public utilities should be a preferred policy over state involvement. After the experience of privatizing water utilities in the UK and other developed countries, private sector involvement was prescribed to developing countries. The results of this policy in developing countries will be presented later.

⁴ The neo-liberal position is based on free trade in free and unrestricted market and private property. It should be noted that arguments in favour of private sector must originate from Adam Smith (1723-1790), who preferred that the private sector should be involved in business and not that State. Later, Hayek (1899-1992) took the relay from Smith’s liberalism and gave it a new intellectual momentum, which became neo-liberalism. However, one small point is that Adam Smith recognized the importance of water and he has reservations that if the private sector was involved in the provision of water, this could lead to unwarranted risks (Smith 1976:33).

The critics of this neo-liberal have generally focused their efforts in demonizing the private sector and the profit seeking motives of large corporations. The private sector responded by proposing (or accepting) certain forms of *corporate social responsibility*. The major opposition which comes from the *rights-based approaches* of water, has been relatively weak in substance and heavy in rhetoric. The main argument that private sector was “superior” to public sector and therefore it should be preferred prevailed. In general, three groups of critics of neo-liberals argument in water supply can be identified for analytical purpose:

- Academics, mainly economists who do not question the private sector involvement *per se*, but criticize the sequencing of the privatization reforms, such as Joseph Stiglitz, Paul Krugman, David Parker, Colin Kirkpatrick, ... This group also calls for better regulation of the private sector involvement.
- Those who believe that the public sector can do the job better if given the resources, such as the Public Service International (which is the global federation of public sector unions), David Hall from PSIRU, Transnational Institute, Polaris Institute...
- Those who criticize it on ideological grounds, which comprises mainly of NGOs such as Blue Planet Project, Public Citizen, and some academics.

What is required here is to put emotions, ideologies and rhetoric aside and provide serious empirical investigation to see if private sector involvement leads to increase in welfare, especially for the poor. This is exactly what this research project intends to do by undertaking empirical research in developing countries and developed countries.

Equity in and access to water services

Issues surrounding water and poverty have now been recognized by the international community as something crucial. All developed economies provide some sort of income support to help the poor afford water supply (OECD 2003a, p. 34). In addition, these countries have also put in place mechanism to help the general population and they have policies targeted to selected groups, such as the poor, large families, older people. These measures include VAT reduction, progressive social tariffs, eliminating disconnections, eliminating annual fixed fees, targeted assistance to poor people such as free water up to a defined volume, forgiveness in arrears, and grants. However, according to OECD (2003a, p. 34) it is argued that the impact of such social policies is limited since the aid is relatively small and the level of poverty minimal in these countries. In another publication OECD (2003b, p. 18) argues that such social policies in tariffs contribute to economic efficiency, resource conservation and equity goals. Such social policies would be more appropriate in developing countries where the level of poverty and inequality is high.

It is the issue of *equity* which interests us here. Equity has four major dimensions:

- Equity among income groups, implying that water should be affordable to poor consumers. Affordability (ability to pay) implies that poor people should not be paying huge proportions of their income for water services compared to other segments of the community. Linked to this is the question of pricing water.
- Equity among types of consumers, meaning those who are big consumers or smaller consumers, industrial consumers or domestic consumers, etc.

- Equity among regions, implying issues of coverage to rural or poor geographic areas.
- Inter-generational equity, which means environmental sustainability.

Linked to the equity issue is the question of *access*. Over 1.1 billion do not have access to safe drinking water worldwide and over 2.6 billion do not have access to sanitation services. Goal 7 of the Millennium Development Goals (MDG) aims to “*Halve by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation.*” On the positive side, 83% of the world’s population have access to improved drinking water (WHO and UNICEF 2004). Those who are not connected to the water supply system, often resort to purchasing water from independent providers, often at excessive high prices (*see graph in annex*). And those who cannot afford it, use unsafe polluted water for consumption and there are over 1 billion of them. WHO estimates that around 2 million people die every year due to diarrhoeal diseases (90% of them are children under 5), which places diarrhoeal disease as the 6th highest burden of disease on a global scale (WHO 2003, p. 1). Around 4,000 children die each day because of water born diseases. And this leads to a vicious cycle for the billions of people who are locked in a cycle of poverty and disease (WHO 2005). In other words, poverty leads to deprivation, which leads to consuming unsafe water, which leads to diseases, and inability to work, leading to increased poverty. This poverty trap can clearly be overcome by having access to safe water.

Going back to our initial concern about private sector involvement in water, what is the premise of this argument. How did it all start? Its important to take a look at what the theory about privatization says.

Why privatise? Theory of privatisation

Privatization is a political phenomenon which creates new rules and new roles between the State, market, and the civil society. According to Savas (1987), there are four types of privatization:

- ideological (less government),
- populist (better society),
- pragmatic (effective solutions), and
- commercial (more business).

As mentioned above, it is argued that private ownership is more efficient in delivering services compared to the State. In other words, privatisation takes place to increase economic efficiency (Yarrow 1999, 162). According to Sheshinski and Lopez-Calva (2003, p. 430), there are four major objectives of privatization:

- To achieve higher allocative and productive efficiency
- To strengthen the role of private sector in the economy
- To improve the public sector’s financial position
- To free resources for allocation in other important sectors such as social policy.

The theory of privatization is an offshoot of the broader issue of ownership and the role of government and regulation (Megginson and Netter 2001, p. 329). It is also

argued that “*divestiture and other related reforms can substantially improve economic performance...*” (Yarrow 1999, p. 157). Adam Smith also preferred that economic activities should be in the hands of the private sector, which will also help the State in having a better financial position (Sheshinski and Lopez-Calva 2003, p. 432). The initial assumptions were that there are no externalities, not a public good, the market is not monopolistic, and no asymmetry of information (Megginson and Netter 2001, p. 329). In other words, privatisation becomes less compelling in these circumstances. This is exactly the case for water supply, which presents all these exceptions and is considered a *natural monopoly* (this concept was introduced by John Stuart Mill (1806-1873)). With all these exception from a theoretical perspective, *is* the argument that private sector involvement in water supply will increase investment and efficiency becomes still justified?

Poverty and privatization literature

Studies dealing with efficiency of private versus public ownership reveal that there is ambiguity and there is no clear relationship. A decade ago, privatization was “heralded as an elixir that would rejuvenate lethargic industries” and revive stagnating economies (Kessides 2005, p. 86). Today, there is an outright rejection of privatization all over the world mainly because of price hikes and affordability issues, access, redundancies, and in some cases exorbitant profits for firms and corruption.

Studies on privatization can be divided into two groups: one that consists mainly of econometrical and statistical work and the other consisting mainly of case studies⁵. The econometrical work generally demonstrates that privatization (measured in terms of ownership) had a positive impact on the economic performance, especially from the micro-economics perspective. However, cross-country econometrical studies have been inconclusive.

On the other side, the case studies demonstrate that there have been some improvements (especially productivity and profit) but the process is much more complex and the benefits are not automatic. In general, both methods show that privatization contributes to improving performance at the firm level and that privatization alone is insufficient to increase economic performance. Ownership itself does not mean better performance. It is also not clear whether the private sector has ameliorated coverage and access for the poor sections of the community. In most of the econometric studies, it is demonstrated that other structural reforms such as regulation plays a crucial role (Parker and Kirkpatrick, 2005). One important contribution of the case studies approach demonstrates that social and institutional context are more important for the privatization to be successful.

We will now refer to some selective academic literature to analyze issues of poverty and privatization. Benitez et al (2003) have found that all categories of the population benefit from access and coverage improvements, efficiency and quality for the case of Argentina. In addition, it is the poor who benefit the most from access and

⁵ For more details see Parker D., and Kirkpatrick, C. (2005). Privatization in developing countries: a review of the evidence and the policy lessons, *Journal of Development Studies*, *forthcoming*.

productivity increase. McKenzie and Mookherjee (2003, p. 212) demonstrate that there is no clear evidence of price increase and increase in poverty in countries that had private sector involvement, especially for the case of Latin America. However they do find negative impact on jobs losses, which according to them were relatively low compared to the nation wide employment. Bayliss (2002) on the contrary, although anecdotal, emphasizes that privatization has had a negative impact on the poor in terms of job loss, decrease in income and reduced access to basic services. However, to get a clearer picture, privatization should be assessed in its economic, historical and social context (p. 619). Birdsall and Nellis (2003) show that privatization has indeed aggravated the asset distribution and income, and have increased inequality. They also show that access increases and in most cases together with price increase. With a rigorous econometrical method, Galiani et al. (2005) demonstrate for the case of Argentina that not only privatised firms were more efficient, invested more and provided better service, but the access also increased in privatised areas. In addition, they also show that welfare increases with privatisation such as child mortality decreased in areas that were privatised, and that it was the poor who benefited the most.

The World Bank itself has also done several studies on the issue of access and affordability regarding privatised infrastructure services. One such study recognizes that the infrastructure of privatisation did not take into account the sensitive social issues and as a result did not have any specific social policy framework (Foster 2004, p. 5). Estache et al. (2001, p. 1180) also highlight that the involvement of private sector in infrastructure projects produces distributional effects, which has been neglected. They also show that the relation between the poor and privatisation is complex and ambiguous. However, they argue that the social issues of privatisation should be tackled within the general framework of the poverty alleviations programmes and not directly within the utility reforms (Estache et al. 1999, p. 19-20; Estache et al. 2002, p. 107). Private sector participation does not necessarily improve coverage and there is no evidence that the poor suffer as a result of private sector participation in the water supply (Clarke et al. 2004). In another study Estache et al. (2002, p. 13) demonstrate that although the total welfare increases as a result of private sector participation, the gains are not shared with the poor. However, a recent World Bank publication recognizes that more in-depth analysis are needed to evaluate the impact of private sector participation on the poor (Kessides 2004, p. 15).

On a much broader issue we can ask if privatisation leads to economic growth? Contrary to a widely held assumption, Cook and Uchida (2003) using a sophisticated econometric model show that privatisation has robust negative impact on economic growth. Plane (1997, p. 175) was more cautious in putting the link between privatisation and economic growth in stating that the hypothesis that privatisation leads to growth cannot be rejected. He also demonstrated that other institutional reforms together with privatisation seem to impact positively on growth. Despite these contradictory and ambiguous results, a recent World Bank publication ashamedly emphasizes that privatisation has been a success in Latin America in terms of productivity increase, profitability, output growth, increasing tax revenues and increased quality (Chong and Lopez-de-Silanes 2005). Where it was not the case, it was a result of weak regulation and corporate governance as well as and state interference.

Literature on access

There is very little empirical work done regarding the effects of private sector involvement in water supply in developing countries. In *cross country* analysis, there are several studies regarding utility privatisation and coverage, but there are only a few on private sector involvement in water supply. In general, the results are inconclusive. One such study worth mentioning is that of Clarke et al. (2004). They are not able to show whether private sector was responsible for increasing coverage, since coverage also increased in areas with public sector management. As for the connection rates for the poor, there is no evidence that this increase is associated with the private sector.

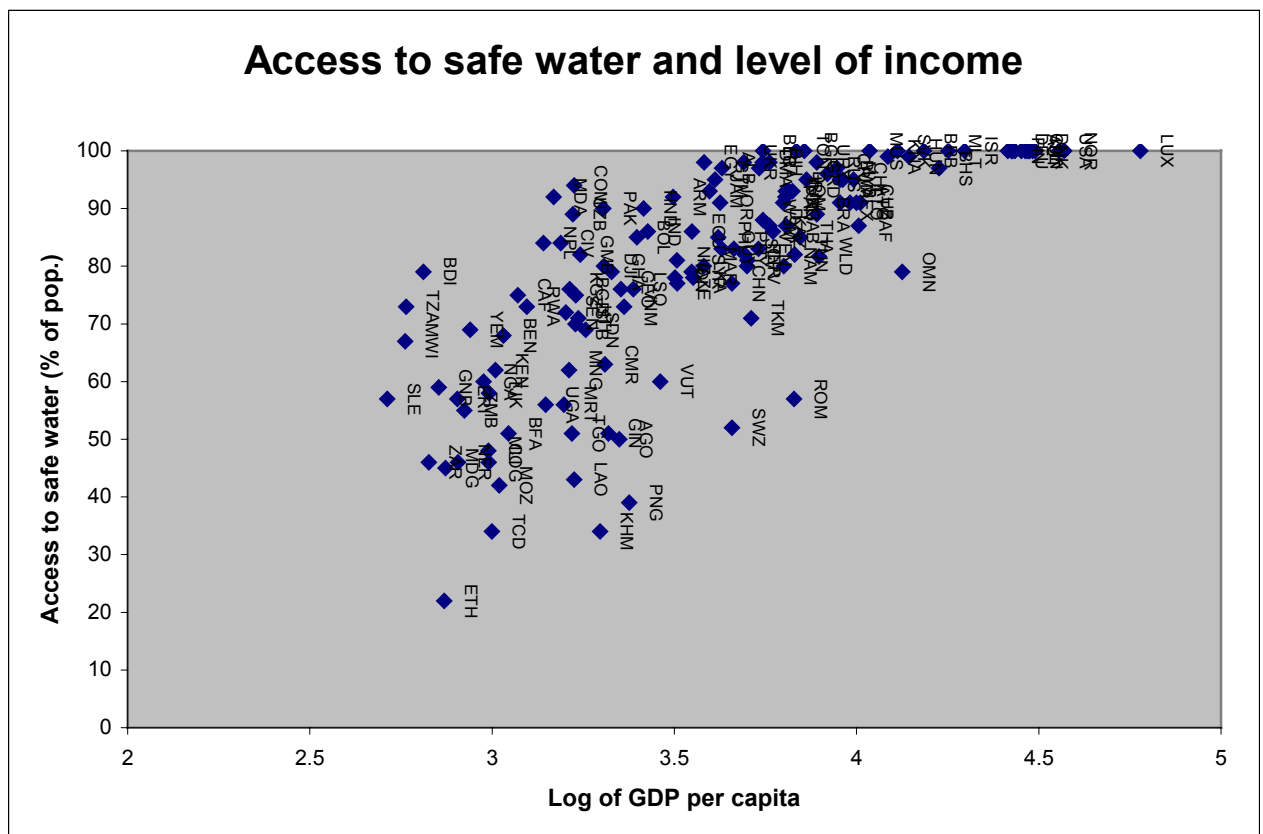
Therefore, these improvements do not reflect on the welfare of consumers. In most case studies, it was found that prices increased after the private sector involvement. Raising water prices is counterproductive and increases inequality, taking into account the low level of prices and income elasticities for water. In other words, water consumption varies very little with income since water needs of each person are similar in terms of drinking, hygiene, sanitation, etc. So they will have to pay no matter how high the prices would be (*See graph on water consumption*). For example, according to Smets (2004, p. 11) water consumption in Europe varies around 75% between the first and last income deciles, whereas income varies around 600%.

To our knowledge there are very few empirical studies done on the *affordability* issues and private sector involvement in water supply in developing countries. It is assumed that the weight (proportion of income) of water bills will be higher for lower income people compared to that of richer ones. For example, in developed countries each household pays between 0.5-2% (1.3 in Germany and Netherlands, 1.2 in France) of their income for water bills (Smets 2004, p. 19). Those who earn the minimum salary in France and Germany pay between 3.4-5.2% of their income. In the UK, the poorest 1% of households pay over 10% of their income in water. In Mexico the poorest pay 5.2% of their income for water, whereas the rich pay only 0.8% (Smets 2004, p. 133). According to international practices, this should not go beyond 5% of a household's income. In some developed countries, a household should not pay more than 3 times the median water bills (3.9 in UK, and 3.6 in France).

After an intensive literature review, we found that the topic of privatization of public services in general have been well researched. Generally, there is agreement that privatization leads to an increase in micro-economics performance (profitability of firms, productivity increase and efficiency of firms). However, how this impacts the broader economy and how this helps in reducing poverty is still not researched. Based on our analysis, there are only a few serious academic research undertaken on the topic of linking privatization with poverty. Therefore we need to undertake this research to investigate how the poor are affected by privatization programs. We will start with the private sector involvement in water and how the issues of poverty are taken or not taken into consideration. Similar research could also be undertaken to investigate how private sector involvement has impact the access and affordability in education.

Some statistics

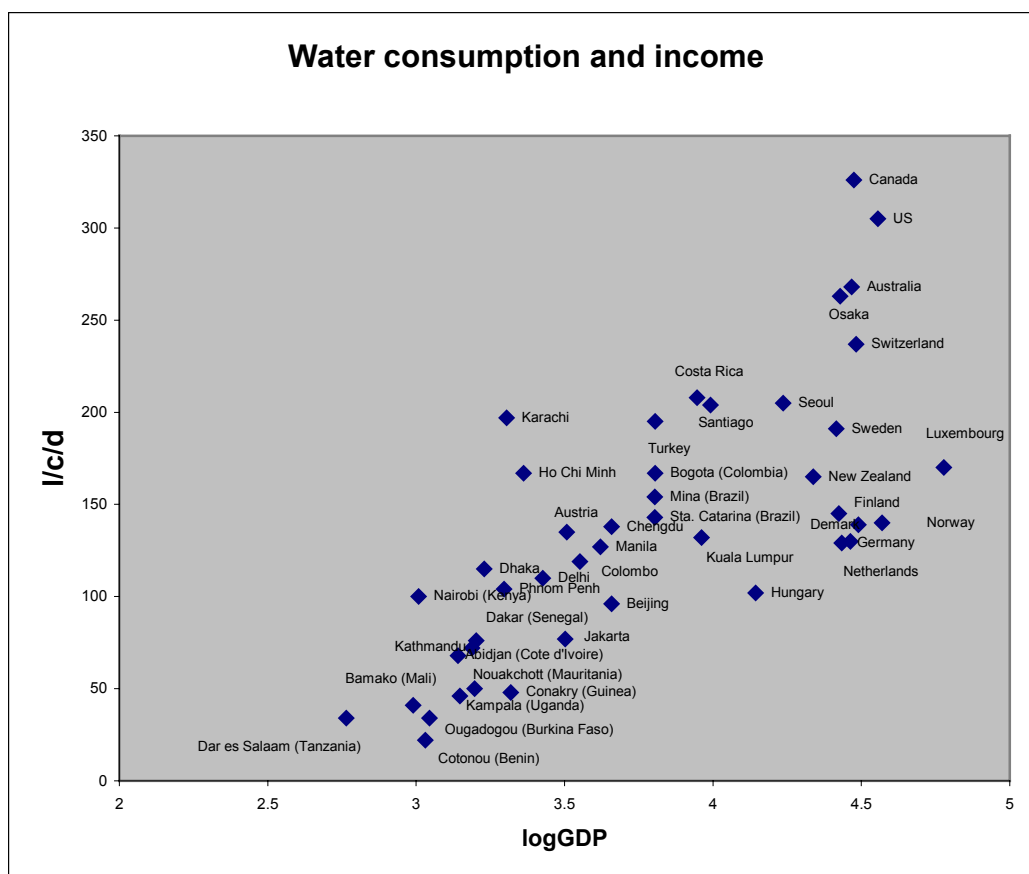
It would be instructive to see what is happening in the water supply sector worldwide. For this purpose, we can rely on some basic statistics. First, looking at the statistics, we notice that utilities supplying water are not able to serve everyone. In other words, there are many people who are not connected to the network (*See table in Annex*). As would be expected, the proportion of people with access to improved water source increases with the level of development, as measured by the GPD per capita (PPP, current international dollars). It is worth noting that this trend is not linear but in a logarithmic form. This implies that extra efforts in terms of resources are needed to reach those who are unreachable and this takes time.



Source: WDI 2005⁶

Does water consumption increase by income levels (by country, and by income levels of households). It appears that water consumption increases with income level. But there are other elements to take into account when generalizing this fact such as climatic zones, availability of water, etc. As mentioned earlier, water is a basic need and therefore the elasticity varies little with income levels. It should be noted that according to WHO, 50 l/d/p is the minimum amount of water needed to sustain oneself. In the developed countries each person uses 150 l/d, whereas in developing countries it could be as little as 20 l/d.

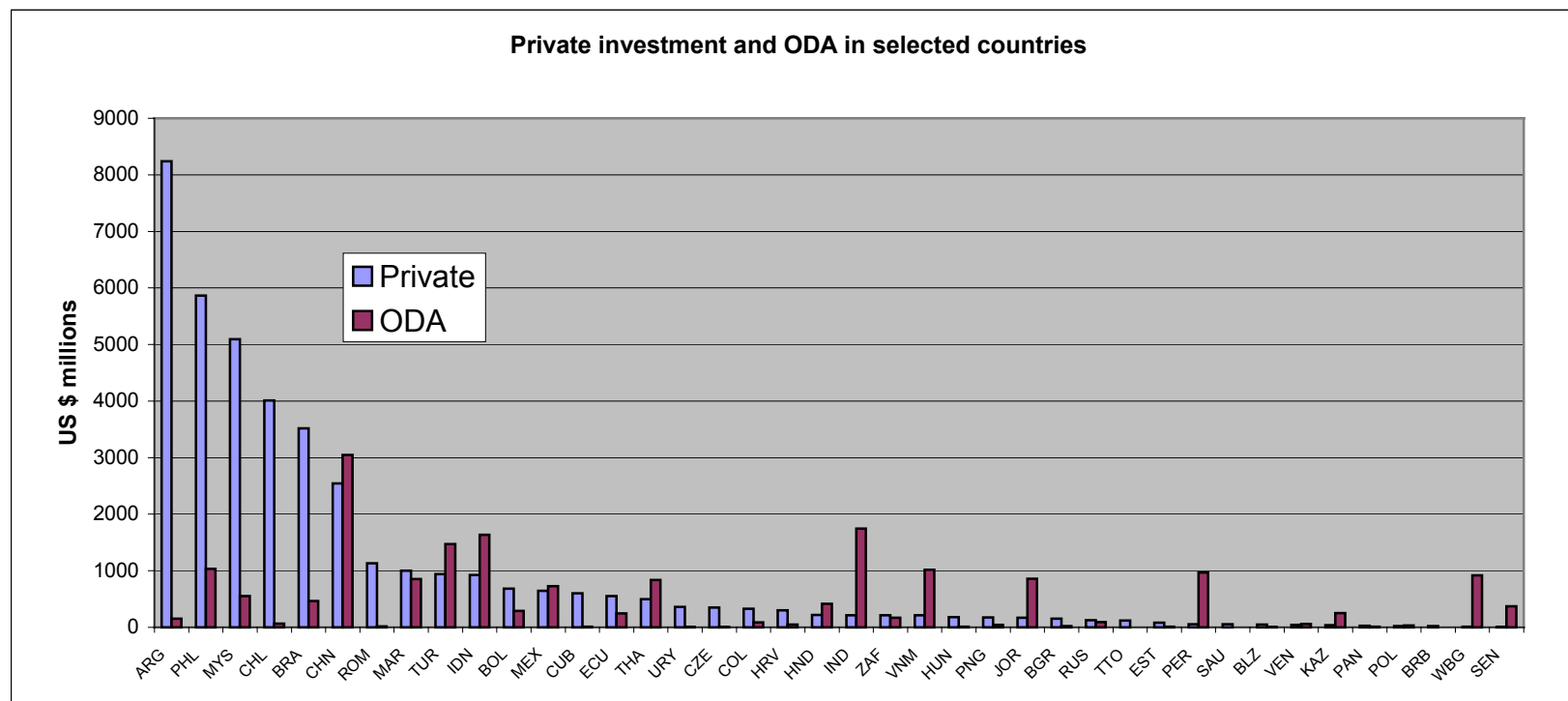
⁶ World Development Indicators. (2005). World Bank.



Source: ADB 2004; OECD 1999; Collignon and Vezina 2000

Where does private investment and aid in water supply and sanitation go?

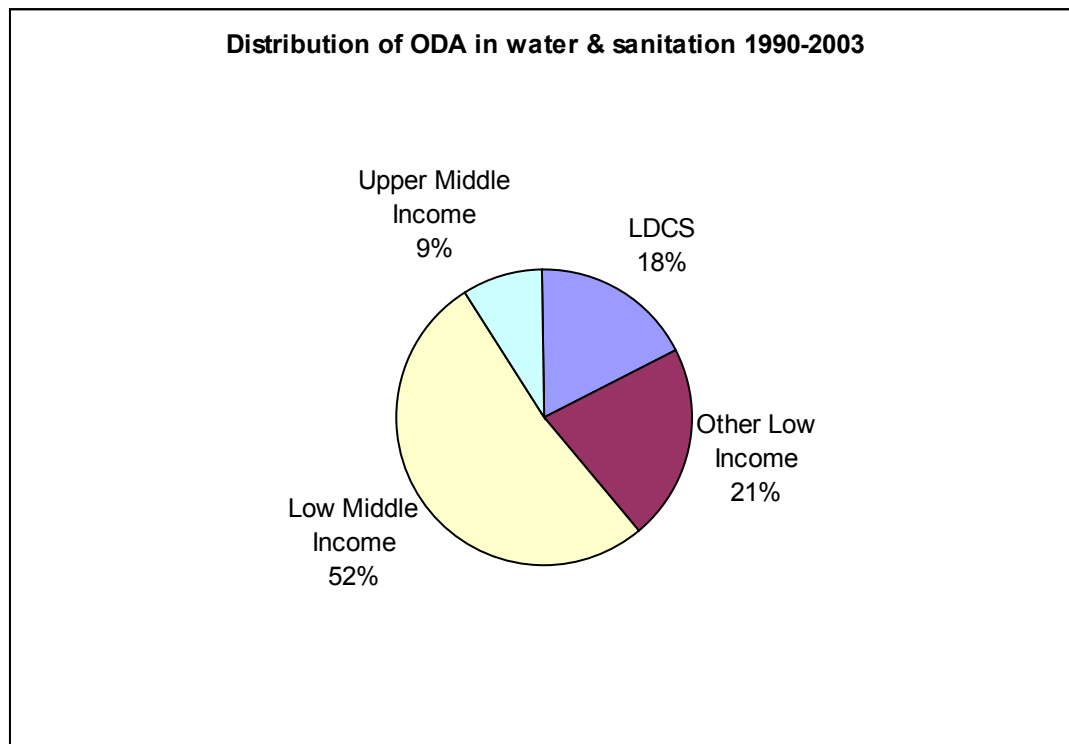
As can be seen from the graph, Argentina received the highest sum of private investment from 1990-2003, representing over US\$8 billion, followed by Philippines, Malaysia and Chile. These are not the countries with the lowest level of access, nor are these countries the poorest of the poor. As for ODA, the highest amount went to China followed by Egypt, India, Indonesia and Turkey during the same period. Once again, aid does not necessarily go where is most needed, especially in Africa.



Source: WDI 2005; OECD 2005⁷

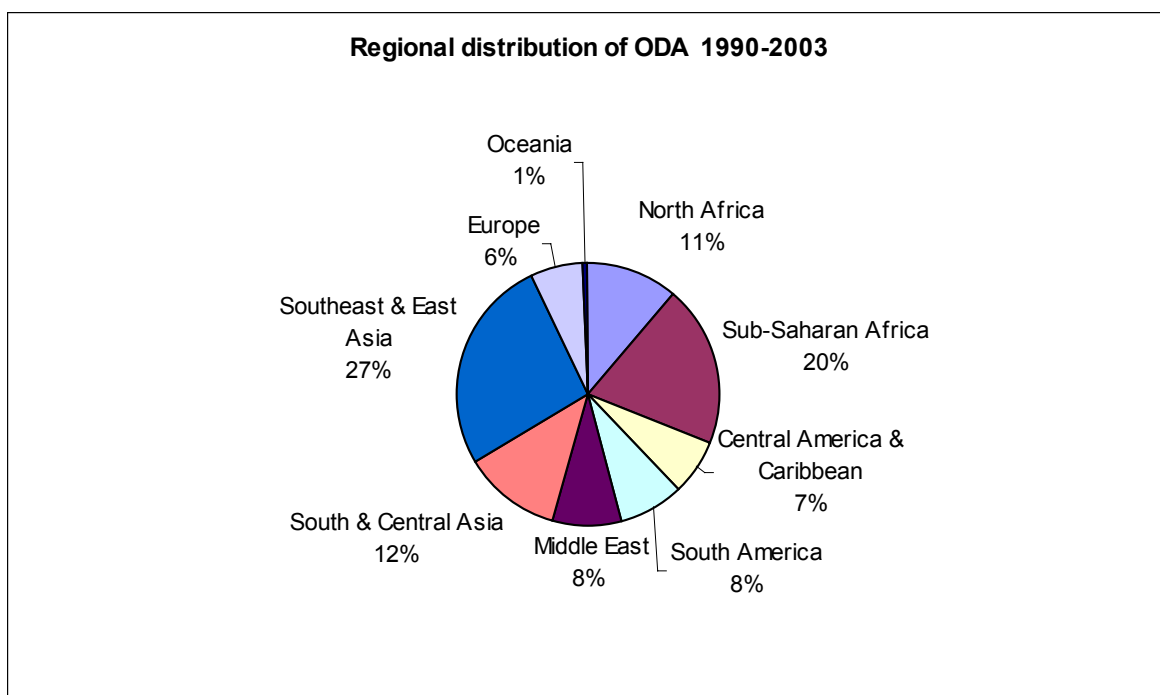
⁷ OECD's International Development Statistics Database on aid and other resource flows. www.oecd.org

Another interesting remark is that it is not the least developed countries that receive the most ODA. Lower middle income countries received over half of the total ODA between 1990-2003, representing over US\$16 billion.



Source: OECD 2005

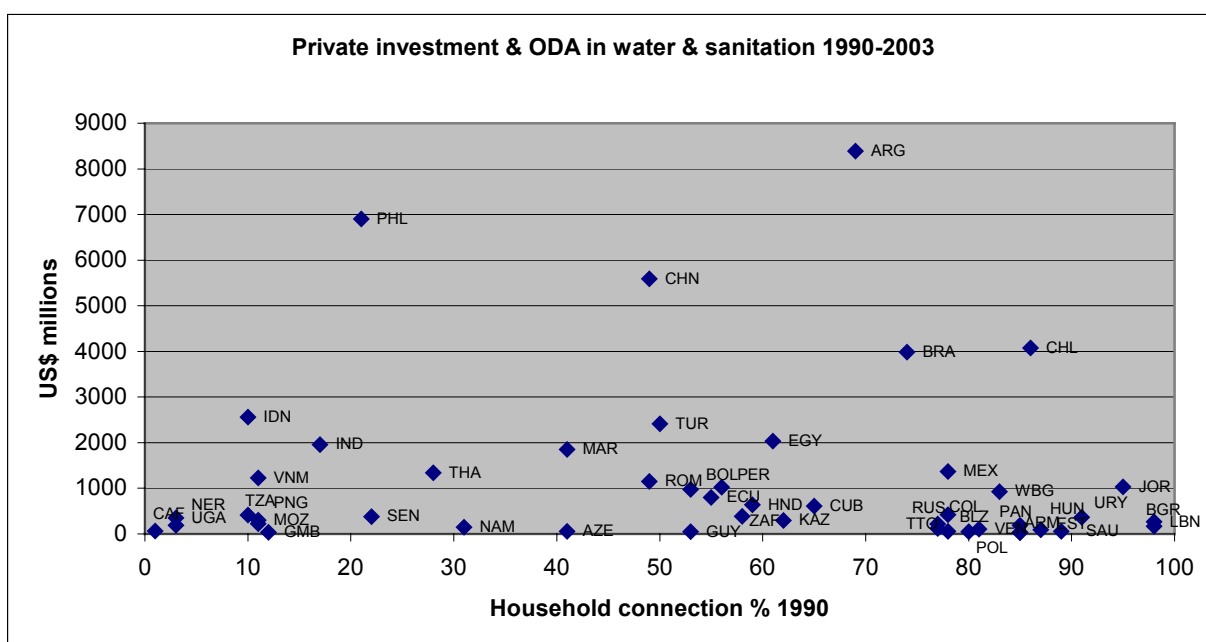
In terms of regional distribution, Southeast and East Asia received most ODA between 1990-2003, representing US\$ 8.5 billion, followed by Sub-Saharan Africa totaling US\$ 6.2 billion, at around 20% of the total ODA flows. Ghana received around 7% of the total aid destined for sub-Saharan Africa, followed by Tanzania, Senegal and Uganda at around 6% each.



Source: OECD 2005

Does the money go where it's the most needed?

In theory the countries that have low household connection rates should receive more funds to improve access for the poor people. However, if we combine private investment and ODA in water and sanitation, we observe the contrary (except for a few outliers such as Argentina, Philippines and China). The countries which have lower levels of connection received little funds and the countries that have over 70% of connection received more assistance both in terms of ODA and private investment.



Source: WDI 2005; OECD 2005

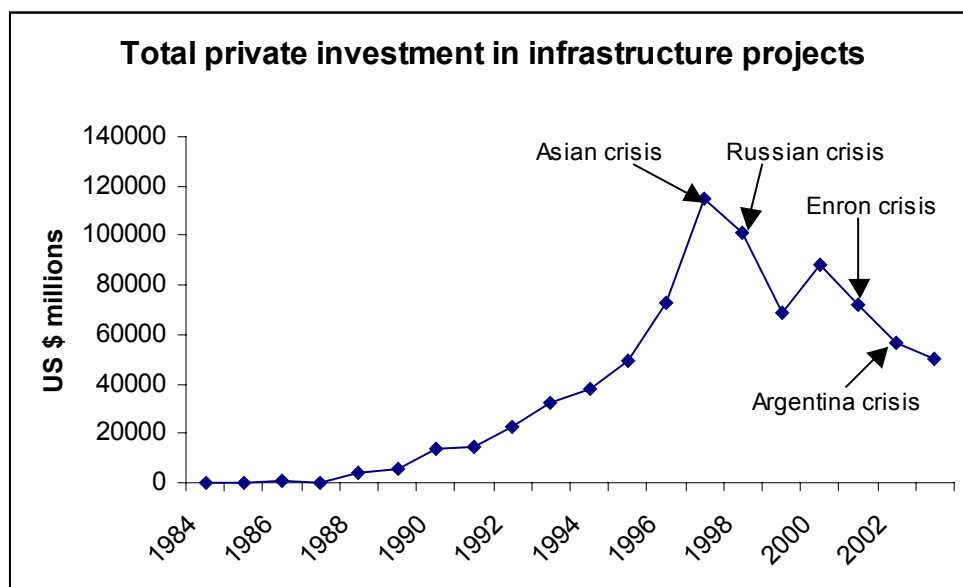
After this presentation of some basic statistical fact, which is not always as rosy we would like, it is necessary to see the historical developments of private sector involvement in water supply.

Private sector involvement in water supply

The involvement of private sector in water supply is not a new phenomenon. In France a few water companies have been supplying the municipalities for since 1852 (Napoleon III established Generale des Eaux in 1852 to finance water connections. Several cities like Buenos Aires, London, cities throughout France, were historically supplied by the private sector.

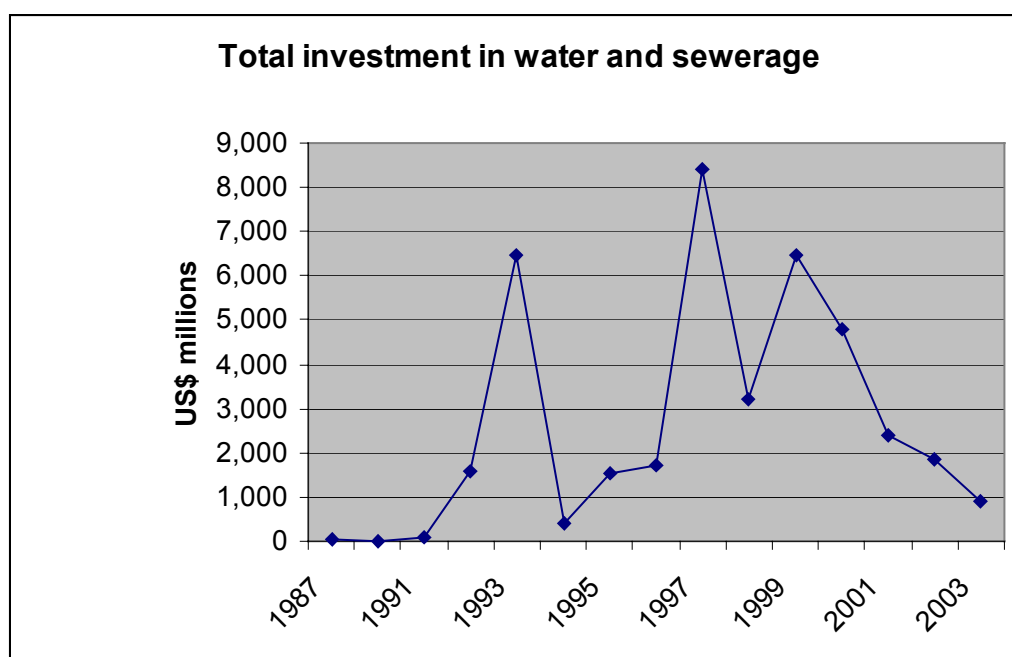
What is new is the believe that private sector is the sole solution for fixing water problems (Rodriguez 2004, p. 108). However, despite this involvement, the State remained dominant throughout the 20th century by providing utility services through state-owned enterprises. Socio-economic, political, and cultural factors contributed to this dominance. Towards the end of the century, it was argued that the State owned enterprises were generally inefficient in providing utility services and they were unable to expand their service coverage. However, as we mentioned above, empirical studies conducted so far demonstrate that the relationship between ownership and efficiency is unclear at best (Anwander and Ozuna 2002, Estache and Rossi 2002).

Despite this ambiguity, there has been a renewed interest since the early 1990s of the private sector in providing the water services. The major regional and international development banks started supporting the idea of privatizing the infrastructure projects, including water services. It should be reminded that development banks such as the World Bank gave loans to governments to improve their water supplies since the 1960s. It was argued that improvement in the public infrastructure would lead to “*development*”. This trend continued till the 1980s when the focus changed on the *supply side economics*. It was argued that the size of governments should be reduced in order to increase economic growth. Therefore the private sector was called in for providing the public services, including water services. A new wave of privatization started during the 1990s, supported by the World Bank in particular.



Source: World Bank PPI⁸

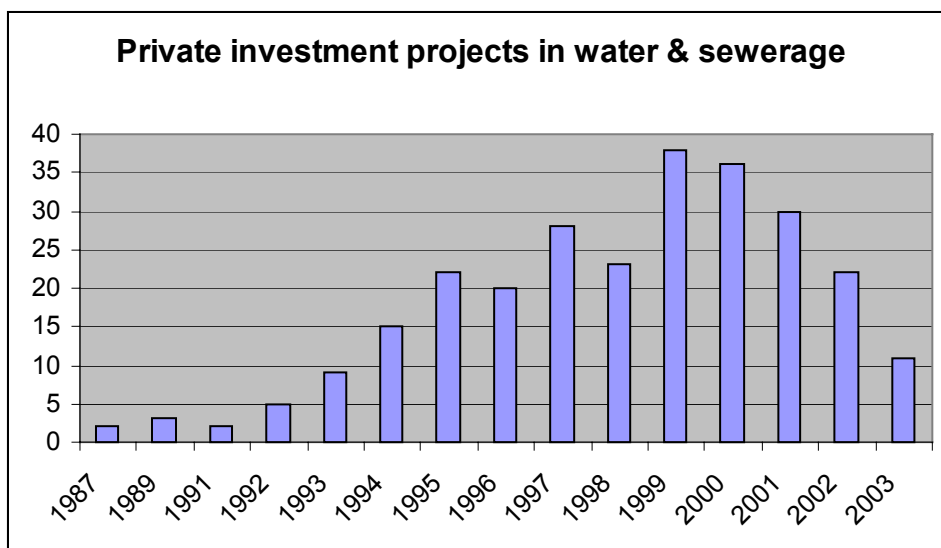
As can be seen from the graph, private sector investment increased dramatically since the early 1990s, reaching its peak in 1997. The Asian financial crisis and the successive crises in other countries and the growing concerns about private sector involvement in infrastructure projects and reservations amongst the investors to go into developing countries due to weak regulatory instruments and market failures led to a waning of private investment in general. Why was there a huge inflow in investment during the 1990s? According to UNCTAD (2000), the mid 1990s has been a period of merges and takeovers, which resulted in increased private flows. It is argued that the so-called “investments” were not really investment (greenfield) but private flows for acquiring new business assets. As for investments in water supply and sanitation, the private investment flows have been very erratic, reaching its peak in 1997 and falling to under one billion US\$ in 2003.



Source: World Bank PPI

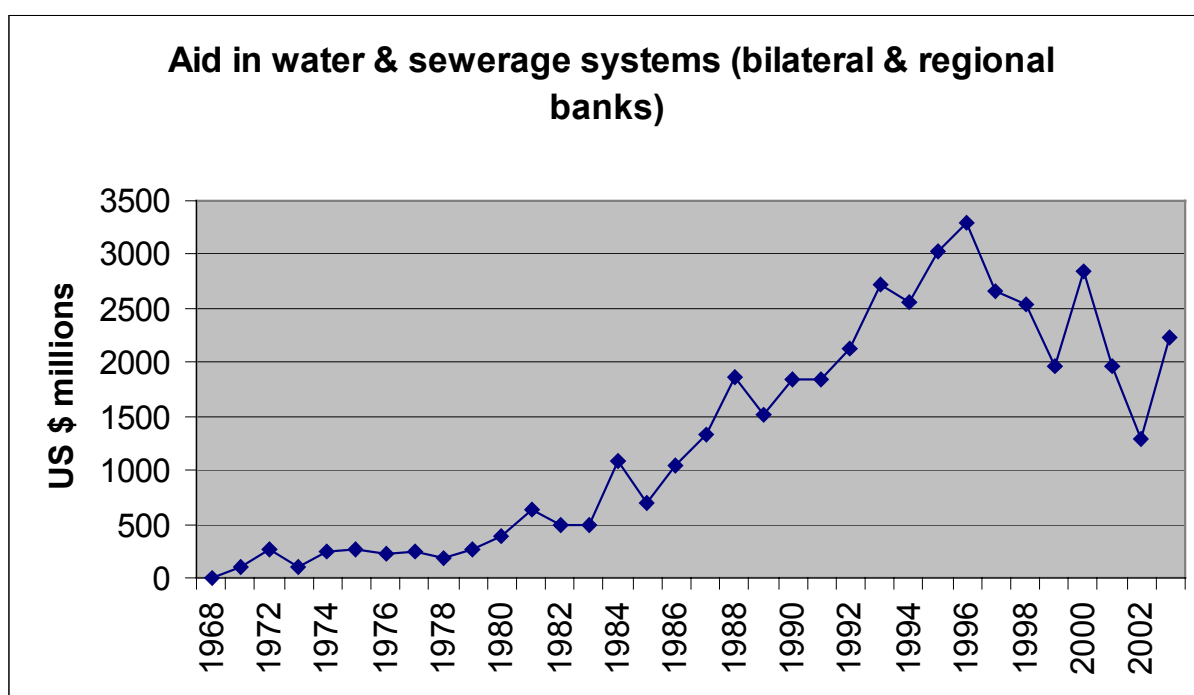
During 1984-2003 period, there were 140 developing countries which had introduced some form or another of private sector participation in infrastructure services (World Bank PPI). According to the World Bank's private project investment database, there were only 2 private investment projects in water and sewerage in 1987, increasing its peak in 1999 with 38 projects and then decreasing to 11 projects in 2003. There are currently 266 projects in developing countries, of which 42% (111) are of the concession type and less than 1% (20) only with full privatization (divestiture). At least 55 countries had some sort of private sector involvement in water and sewerage by the end of 2003.

⁸ World Bank's private project investment database. www.worldbank.org



Source: World Bank PPI

In addition to private investment, aid could also help developing countries solve their water problems. Aid in the water and sewerage systems by bilateral donors and regional banks also followed a similar pattern, culminating in 1997 and falling since then. Why did aid follow similar pattern as private investment. It is argued that aid money was used in the privatization process, in other words, it was used to make the sale of State-owned enterprises more attractive to buyers.



Source: OECD 2005

Reforms of the water sector and private sector involvement has taken different forms such as complete privatization as in the case of UK, BOT models, private management contracts, concessions. *See Table below for different types of private sector involvement.*

Different forms of private sector participation in water supply

Option	Ownership	Financing	Operations
Service contract (Mexico City, Santiago-Chile, Madras)	Public	Public	Public then some private
Management contract (Cartagena-Colombia, Gdansk-Poland, Johannesburg, Mali)	Public	Public	Private
Lease contract or <i>affermage</i> (Cote d'Ivoire, Guinea, Czech Republic)	Public	Public	Private
Concession (Buenos Aires-Argentina, Manila, Cancun-Mexico, Jakarta)	Public	Private	Private
BOT or BOOT contract (build-operate-transfer) or (build-own-operate-transfer) Mendoza-Argentina, Izmit-Turkey, Natal-South Africa)	Private then public	Private	Private
Reverse BOOT	Public then private	Public	Private
Joint ownership	Private and public	Private and public	Private and public
Sale or full divestiture (England and Wales)	Private	Private	Private

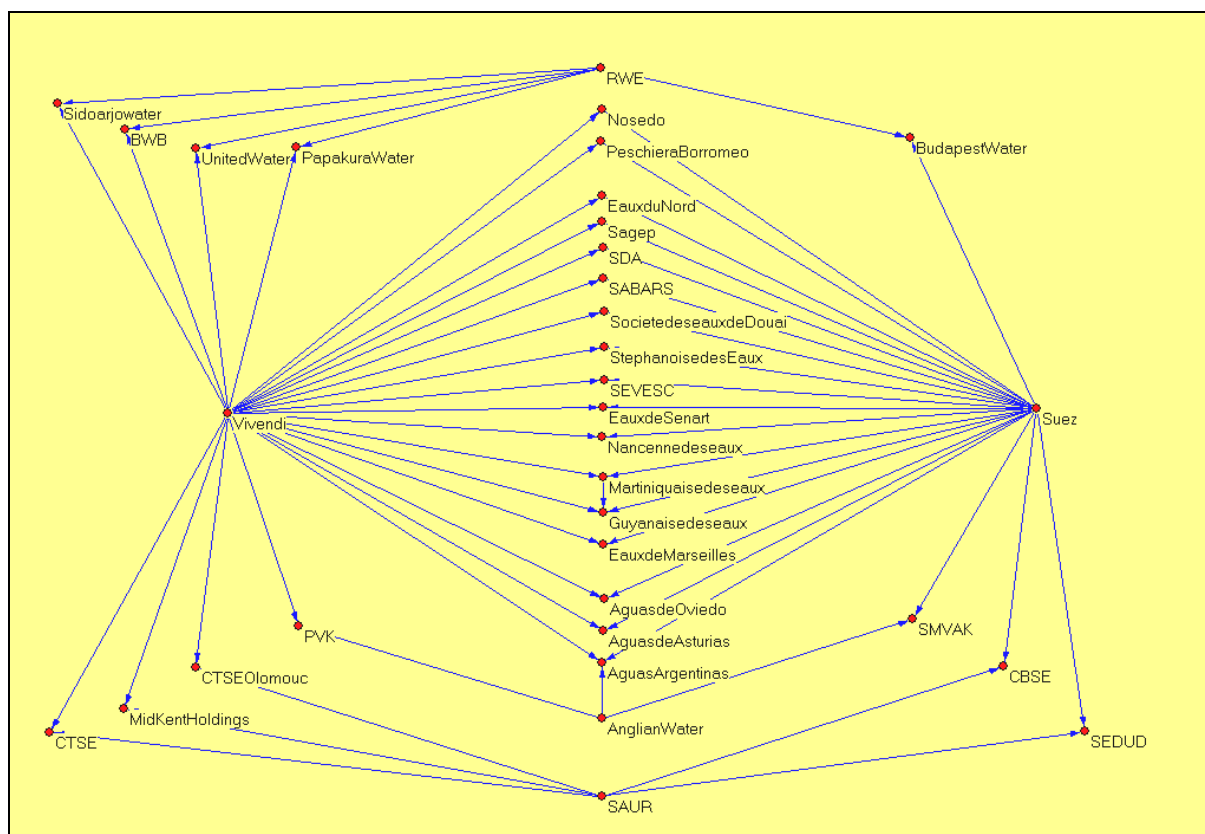
Expanded from Kessides 2004

In these changes, i.e. shifting of responsibilities from State to market, the institutional framework also alters. After this brief analysis of the private sector involvement in water supply, it would be time to see what impact did they have in developing countries and what are the results. But before that, who are the global players in the water business.

Who are the players

The water sector is dominated by a few international companies such as Suez, Vivendi and SUAR from France, RWE-Thames (Germany, UK). It should be noted that it is estimated that between 3-5% of the world population is supplied through piped water by the private sector (OECD 2003, p. 13; Rodriguez 2004, p. 108). These few multinationals manage to restrict competition, both at international level and also at local levels. For example, in France Suez and Vivendi control 85% of market. Joint ventures are a common practice by these giant water companies to prevent competition (See diagram).

Joint ventures between leading water multinationals



Source: Lobina and Hall 2003

The two French companies, Suez and Vivendi are present in over 100 countries. Vivendi is claiming that it has operations in some 80 countries and is supplying drinking water to 110 million customers worldwide⁹. Suez claims it supplies drinking water to 91 million people and some 49 million with sanitation services (See table)¹⁰.

Presence of Suez worldwide

	Water supply (million)	Sanitation services (million)
North America	9.9	5.3
South America	21.6	15.9
Europe	33	20.3
Africa and Middle East	9.4	7.2
Asia Pacific	17	6.4

Source: www.suez.com

Results so far: has privatization gone full circle?

The results are quite mixed if we look back to see the effects of privatization in developing economies. Very few of them had success, while the majority did not achieve what was intended of the privatization. And most of the services that were in the private hands are confronting difficulties (See Table in Annex). The experiences of water companies in developing and developed countries demonstrates that private

⁹ See Veolia website at www.veoliawater.com

¹⁰ See Suez website at www.suez.com

sector involvement in the water sector has a very unreliable record. There has been bribery, corruption (Davis 2004), non compliance of contractual agreements, layoffs, tariff increase, environmental pollutions and so on. “Sign and renegotiate” is *l’ordre du jour*.

Nowadays, it is argued whether privatization has gone full circle. Some have argued that there will be a need to “remunicipalize” the water services (Bakker 2003; Robbins 2003). Hall (2004) argues that privatization of water services has failed in many parts of the world and are falling apart. There is an emerging trend of failures in water privatization. A Report by the Public Citizen (2003) documents these cases including Buenos Aires (Argentina), Atlanta (Georgia, USA), Manila (Philippines), Cochabamba (Bolivia), Jakarta (Indonesia), Nelspruit (South Africa), and the UK. Certain other cities like La Paz (Bolivia) have also joined the rank of failed privatization. Some of the major water companies (like Suez, Veolia, and Thames Water) are withdrawing from developing countries as result of the economic and financial crises (Asian crisis, peso crisis in Argentina, natural disasters like El Nino, draughts and floods). Are these kinds of failures anecdotal or is there a trend?

Most of the privatization was done during a stable period and it was assumed that there would be macroeconomic stability and sustainability. In some cases the implicit assumption of such stability and sustainability proved to be unrealistic (Argentina, Philippines, Brazil). During macroeconomic instability, it is very difficult to calculate a price that is appropriate for the private operator and at the same time affordable to the disadvantaged consumers and is pertinent to the economy (Chisari and Ferro 2005).

For example, there were 10 projects in water supply that were cancelled worldwide between 1991-2001 by the World Bank. They are another 5 which are “distressed”¹¹. Several reasons were advanced to explain why these projects were cancelled. In most cases, these projects were confronted with controversies relating to high price increases, and problems relating to non-payment from consumers (Harris et al. 2003).

Projects cancelled

Year	Country	Segment
1991	Central African Republic	Water treatment and distribution
1993	Malaysia	Sewerage collection and treatment
1995	Argentina	Water treatment and distribution and sewerage collection and treatment
	China	Water treatment
	Malaysia	Water treatment and distribution
1996	Brazil	Sewerage treatment
	China	Water treatment
1999	Argentina	Water treatment and distribution and sewerage collection and treatment
	Bolivia	Water treatment and distribution and sewerage collection and treatment
2001	Vietnam	Water treatment and distribution

Source: World Bank PPI

¹¹ projects where the government or the operator has either requested contract termination or are in international arbitration.

Projects in distress

Year	Country	Segment
1993	Argentina	Water treatment and distribution and sewerage collection and treatment
1995	Argentina	Water treatment and distribution and sewerage collection and treatment
1997	Argentina	Water treatment and distribution
	Philippines	Water treatment and distribution and sewerage collection and treatment
1998	Argentina	Water treatment and sewerage collection

Source: World Bank PPI

According to Hall et al. (2005), there is a very high rate of failure in water and sewerage projects. Most of the multinational firms are having difficulties in getting involved in the water business. For example, from 1997-2004, there were 13 projects that were cancelled or being re-negotiated in Asia (See Table below and in Annex). In addition, many other such projects have been prevented by public pressure. Some have even argued that the theoretical foundation of private sector involvement in water supply is redundant (PRINWASS 2004).

Terminated contracts, exits and major renegotiations in Asia

MNC	Operation	Country	Type	Start date	End date	Status	Comment
Suez	Thu Duc	Vietnam	WS/BOT	1997	2003	terminated	Exited in dispute over contract terms
Thames	Da Chang, Shanghai	China	WS/BOT	1997	2004	terminated	Ended concession when guarantees cancelled
Thames/Veolia	Xian Water	China	WS/BOT		2001	terminated	Sold to municipality
Thames	Kelantan Waters	Malaysia	WS/BOT	1996	2002	terminated	Sold to municipality
United Utilities	Indah Water	Malaysia	WW	1997	1997	terminated	Nationalised
Cheung Kong	Shantou	China	WS/BOT?		2002	terminated	Exited in dispute over contract terms
United Utilities/NW Water	Bangkok	Thailand	Construction	1993		terminated	Exited sewerage construction contract
Suez	Shenyang	China	WS/BOT			terminated	Sold to municipality
Anglian	Moa Point	New Zealand	WWT/BOT			MNC exit	Sold to United Water
IWL	Wellington Manila Water	Philippines	WD/C	1997	2004	MNC exit, renegotiation	(Veolia/Thames) Sold % stake to other partners
Suez	Maynilad water	Philippines	WD	1997		Renegotiation, threatened exit	
Suez	Jakarta	Indonesia	WD	1998		Renegotiation, threatened exit	
Thames	Jakarta	Indonesia	WD	1998		Renegotiation,	

Source: Hall et al. 2005

Why are there so many projects being cancelled or being re-negotiated. Several reasons have been advanced, but one of them which merits particular attention is the lack of understanding of the local context in which reform is taking place.

The politics of reform in the water sector

Although most of the economic studies tend to be favorable to privatization (Megginson and Netter 2001), why then are these results not consistent with the street protests? The answer lies in the political economy and the social structure. Today, some (elites, donor agencies, etc.) try to impose what they think is appropriate for a better world and for their own prosperity. It is argued that policies should be based on the existing equilibrium of social, cultural and political structure of each country. There could be better “social governance” in order to improve social welfare in tandem with the existing formal or informal social institutions (Barraqué 2003).

Some social scientists have repeated that the social, economic and political dimensions are inter-linked together. For any policy to be successful, all the dimensions should be taken into account for a given society. The economic and political areas are a product of the social governance. Therefore if the intended policy is not in confirm with the social governance, it is doomed to be rejected. This is precisely what happens in the case of privatization.

There are many examples to illustrate why privatization has failed in certain countries. Nickson and Vargas (2002) show how vested interests combined with politics, lack of proper communication and street protests managed to cancel the Cochabamba concession projects in Bolivia. Kohl (2004) also demonstrates how the poor understanding of the social and political realities led to the failure of Bolivian privatization project. In this context and taking a much broader picture, Kay (2004) argues that markets are intrinsically linked with the social institutions and values of each society.

There has been an increasing feeling of discontent and active resistance against privatization in developing countries and developed countries alike. It is argued that the economic benefits of privatization has not been achieved and that the social impact of privatization has been catastrophic, especially to the poor. This topic of how the civil society resists to the neo-liberal aspects of globalization and in particular towards privatization is worth a research programme in itself.

Another reason of private sector failure in water supply that is frequently advanced is the lack of regulatory mechanism in place.

Has regulation helped?

Whenever privatization failed in terms of achieving its contractual goals, it was argued by the pro-privatization camp that it is mainly due to weak regulatory

mechanism in place. In other words, regulation became the scapegoat, and the concept of private sector involvement still prevailed.

It is widely recognized that *regulation and regulatory governance* are one of the key elements of development policy thinking in promoting pro-poor market-led development (Kirkpatrick and Parker 2004). However, very little attention has been focused on this topic in developing countries. The donor agencies and development banks put more emphasis on privatization, liberalization and deregulation of economy, without prior strengthening the regulatory governance. In developing countries, the introduction of competition and effective regulation has been neglected. The sequencing of privatization, regulation and competition is important. Zhang et al. (2005) demonstrate using a panel data econometrical model that establishing a regulatory authority and introducing competition prior to privatization results in better performance for the operator as well as for the consumers.

It is worth mentioning that the economics of regulation or regulatory economics has been an offshoot of the neo-liberal economic strategies (Minogue 2002, p. 652). To better understand regulation, we have to look at how the role of State has evolved overtime.

During the past 5 decades, the role of State has dramatically changed regarding growth and development. In the period going from 1960s to 1980s, it was *à la mode* for the State to be involved in promoting industrialization through *import substitution*. The State played an active role both as actor and also as a regulator to promote industrial and agricultural development. However, as a result of “government failures”¹² in some countries during the late 1980s and due to some relative successes in privatization and liberalization in developed economies, international development agencies and donors tried promoting privatization, liberalization and deregulation in developing economies. As a result, privatization has also become one of the key conditionality elements of donor agencies and international development institutions like World Bank, IMF and even in Poverty Reduction Strategy Papers (PRSPs), Heavily Indebted Poor Countries (HIPC) for the disbursement of aid funding (Bayliss 2002). Empirical studies do support this view that aid plays a strong role in deregulating and liberalizing an economy (Kilby 2005). This shift from an interventionist role towards a more regulatory role of the State assumes that the private sector should be left alone in providing goods and services and in some cases (such as utilities infrastructure) government regulation is necessary (Majone 1997).

There are relatively few studies done on the nature, role and performance of these new forms of regulatory state. This is particularly true for developing countries which have very different social, cultural, and economic settings. Consequently, it should be reminded that models of regulation from developed countries or “best practices” approach cannot be easily replicated or transferred to developing economies. Since regulation is deeply embedded in the local cultural and institutional setting (Minogue 2005). In this case there is a “reality gap” between the advocates of neo-liberal ideas

¹² According to Yarrow (1999, p. 158), government failure impedes the efficient functioning of markets.

and the actual legal, administrative, political, and economic processes in developing countries.

There seems to be a general consensus amongst development practitioners that there is a need for better regulation. However, effective and efficient institutions take time to develop, even in developed economies. It is argued that developing countries have indeed established regulatory institutions on paper, but in reality they are ineffective (Kessides 2005, p. 86). So there seems to be a gap in developing good performing institutions that would protect the consumers, operators and the government. It seems that too much attention has been drawn into the end result, rather than on the basic foundations of the process.

Since the private sector has been involved in the water business the 19th century in developed economies, can this offer some lesson as to where we should head towards.

Can history be our lesson?

From a historical perspective, the current global water situation is a result of social, economic and ideological developments (Juuti and Katko 2005). Private initiatives were instrumental in establishing the modern water supply systems, which led to privately owned or operated systems. This started as a result of increased urban growth since the mid-1800s in most European countries and North America. They argue that England was the precursor of modern water supply systems, which later spread to Germany, elsewhere in Europe and to the US.

However during the late 1800s, as a result of their unsatisfactory services (inefficiency, costs and corruption), these services were reverted to the public or municipal ownership. It is argued that this transfer led to a better control, more employment and better benefits to the local people. As mentioned earlier, one exception was France, where private operators such as Compagnie Générale des Eaux (later Vivendi and Veolia now) and Lyonnaise des Eaux (Suez now) which were established in 1852 have survived till now. This is peculiar to France with its over 36,000 municipalities and as a result of continued presence of these companies through concessions. Barraqué (2003, p. 210) argues that the French system of water management by the municipality was intended to get the rich pay for the poor. But the problem with this method was that it limits other players to *compete for the market*. This is also the case for Barcelona and Venice.

Since the late 1980s, (re)introduction of the private sector in supplying water services is back on the agenda. This trend started in the UK with the arrival of the Thatcher government¹³, and with the neo-liberal ideology propelled by the *Washington Consensus* through international donors such as the World Bank. It is argued that the major motives for privatising (water services and other infrastructure) was mainly *political* and *ideological*. However, as mentioned above within a decade, private companies are proposing to return to public control through mutuals or corporations as a result of declining prices and profits (Bakker 2003).

¹³ A point worth noting is that government subsidies for the regional water authorities had substantially declined during the oil crises of 1974 and 1979. As a result the service quality had also declined due to lack of funding.

From a historical perspective, Juuti and Katko (2005, p. 108) warn that water should not be only treated as economic good but should be seen from the political, economic, socio-cultural, technological, environmental, and legislative dimensions. The World Bank (2004, p. 166-167) mentions that since developed countries used private sector to develop their water supply, developing countries should likewise encourage the private sector participation in this sector. History however warns against liberalizing the water sector to attract private operators and that there is no one-size-fits-all solution.

Even in the case of developed countries like France and the UK where the private sector has been dominant in supplying water, there are numerous problems. For the case of UK, the prices charged to customers are relatively high compared to those charged by the public companies (Dore et al. 2004). Similar results regarding lack of efficiency gains of the private sector in the UK are demonstrated by Saal and Parker (2001). In addition, the rate of return and profits of the private companies have been extremely high. As for the case of France, tariffs have also been substantially higher (around 40%) compared to publicly managed companies and there is lack of regulation by the municipalities, which leads to corruption and lack of competition. It is argued that the private sector did not have efficiency advantage in both cases and that privatisation was unwarranted.

Conclusion: private sector and the poor in water supply?

It was argued that the private sector involvement in the water supply would amongst other things, help the poor have access to the service. However, experiences of private sector involvement in water supply worldwide demonstrate that there is conflict between social development, public health, environmental concerns and poverty reduction on the one hand and the motive of profit maximizing of the private sector on the other. Is the profit seeking motive of the private sector reconcilable with providing service to the poor? In other words how can the diverging interests between the public sector, private sector and consumers be reconciled?

This research will investigate whether the private sector involvement in water supply based on commercial and profit motives are counterproductive or beneficial to the notion of public service of water. What are the can repercussions on the people in terms of social, economic and environmental risks. In other words, is the private sector prepared to deal with issues of poverty in developing countries. For one point seems clear is that they are looking to make money by supplying water and recent developments shows that they are not interested in the poor since there is lack of commercial viability of water supply in developing countries (Global Water Intelligence 2005).

In other words, from the private sector's perspective, low income countries and the poor in particular are unattractive. There is a choice between maximizing profits for the shareholders or achieving universal access of basic water supply. Recently international firms have been selecting countries where the poverty level is not that high. In addition, these firms also try to choose or "cherry pick" better off customers in an urban area. This sort of practice has been observed recently in Cartagena (Colombia) and Shanghai (China) where the slum dwellers are excluded from the service. Or in some cases by providing standpipes for a selected area rather than household connection as in the case of La Paz (Bolivia) or in Cordoba (Argentina). However, in some cases innovative methods has been used to serve the poor such as voluntary community labour, community materials and cross subsidies from the rich as in the case of Buenos Aires (Argentina).

In addition to these difficulties and choices, can the private sector be sensitive to the complexities surrounding poverty regarding different types of consumers? Does the cost and prices of water differentiate between different types of consumers (poor or rich)? Does the private sector take into account the cost associated with inaccessibility of water, or does it account for the affordability of the poor? It is recognized that the cost recovery principle would be unaffordable to the poor. How are then social policies in terms of subsidies targeted to the poor?

To overcome some of these insufficiencies, the private sector prefers to rely on subsidies, soft loans, and a renegotiation of the contractual agreement in order to provide appropriate service to the poor. In other words, the private sector is using the same sources of funds as the public sector, such as loans from bilateral and multilateral donors, aid money, and money from customers through tariffs. In general, and as evidence suggests, it is public subsidies, soft loans and aid which supports the private sector in providing services to the poor. As would be expected, the World

Panel on Financing Water Infrastructure has also recommended this sort of financing schemes.

In order to explore the exact nature of private sector involvement in water supply, further empirical research is needed to investigate how effectively the private provision of water is compatible with issues of equity, access and affordability. We need to better understand how to deal with such issues and how best to design appropriate social policies.

Research Proposal

Social Policy, Regulation and Private Sector Involvement in Water Supply Addressing Issues of Equity, Access and Affordability

This project is proposed after the successful completion of UNRISD's research project on *Commercialization, Privatization and Universal Access to Water*, which conducted seven case studies (Argentina, Bolivia, Chile, Finland, India, the Philippines, and South Africa). These studies explored a range of experiences of water service provision, focusing in particular on those actively involving the private sector. It tried to shed light on some of the real impediments that have prevented governments and the private sector from bringing clean water to the poor, as well as the role that regulation and regulatory institutions have been playing in the water sector. The project also tried to clarify the nature of the "efficiency and equity" tradeoff that is apparently affecting the provision of water services in developing countries, and to identify the institutional constraints to achieving universal access to water.

This new research project is much more precise and intends to investigate how the private sector involvement in water supply deals with poverty issues in terms of access, equity and affordability. It will explore the various social policies and regulation that are intended to help the poor. This research will also investigate the nature of regulatory mechanisms in place and their results. For issues of access and affordability, household data from selected countries and cities as case studies will be used for this investigation.

Project objectives

This research project on social policy, regulation and private sector involvement in water supply is considered both as an academic exercise and as having major policy implications for governments and international agencies. From an academic perspective, the project intends to investigate how relevant the theory of private sector involvement in natural monopolies like water supply is. As discussed in the issue paper, it is often argued that the private sector involvement will achieve higher allocative and productive efficiency, strengthen the role of private sector in the economy, improve the public sector's financial position, free resources for allocation in other important sectors such as social policy, and increase coverage. In natural monopolies like water supply there is market failure. In this context, it is argued that regulation is required to protect the private operator, the government and the consumers. The research will shed light to this argument and test the validity of it.

Concerning the policy implication, it will investigate whether governments are adopting the appropriate policy to solve the problems related to water supply. This will be analyzed within the general context of liberalization and deregulation of the economy propelled by international development agencies. The results will also illustrate whether these international agencies are advocating the relevant policies vis-

à-vis the role of private sector in infrastructure projects in terms of promoting social development goals.

The overall objective of the research is to investigate whether private sector involvement in water supply is the right option, even with regulatory mechanisms in place. In order to explore this, the research will try to address issues surrounding poverty, access, affordability, and how social policies and regulation are designed to achieve the specified objectives of the private sector involvement. In other words, the following issues will be addressed:

- Has the private sector involvement in water supply improved access, affordability or other specified objectives of the private sector involvement?
- How does social policies and regulation address issues of affordability and access
 - What is the role of tariffs (social tariffs, increasing block tariffs, metering)
 - How are policies designed to help the poor (minimum service levels, subsidies)
 - Are the poor able to benefit from the social policies in place
 - How are issues of access addressed?
- How can the private sector be made to serve poor customers?
- Through which mechanisms are these policies being regulated and enforced (laws, institutions, etc.)
- What are the political, social and cultural institutions or norms in place to monitor the private sector involvement in water supply?

Conceptual Framework

This research will be carried out within the general framework of social policy theories. Social policy here will mean any policies put in place by the government or its bodies for the betterment of the population, but especially the less privileged sections of the populations. In other words, social policy is the study of the role of the state in relation to the *welfare* of its citizens (Alcock et al. 2000). Such policies are also based on the notion of *equity*, which addresses concerns of justice, equality, and rights. Equity here implies a distributional principle, which is applied in the allocation of services and benefits in order to achieve what is considered as just and fair division (Lister 2002). Such policies enable us to study issues relating to poverty, education, health, income distribution, housing, access to water supply, affordability, and other social services.

A multi-disciplinary approach will be taken to investigate the relevance of private sector involvement in water supply. As is known that disciplines such as economics, sociology, politics, are just devices to undertake academic inquiry. The real world does not function alongside these disciplines, but all the disciplines are needed to understand realities. However, there is a danger of taking a multi-disciplinary approach, which may lead towards ambiguity and methodological confusion. The case studies will be analysed through a multi-disciplinary approach involving economics, sociology, politics and environment.

To analyze the issues of poverty and social policy in water supply, two specific themes of access and affordability will be chosen. The matrix below will be used as a general framework for analyzing affordability and accessibility issues and the social policies associated with them.

Affordability matrix

	Level of affordability problem	
	High	low
High		
Social policies to ease affordability problems		
Low		

Is there a problem of affordability

How to measure affordability

What social policies are in place

How are the tariff set (price cap, rate of return, sliding scale)

How is the problem of affordability solved

- Targeted subsidies
- Rebalancing tariff (fixed and variable)
- Providing vouchers

How to reduce cost of service (

How to solve problems of payments (frequent billing)

How to target the poor (criteria)

It is expected that the proportion of income for water charges will increase as we go towards the poorer households. Certain household would pay up to 10% of their income for water bills (as in the case of UK). In some cases, poor households pay up to 20% of their income from water vendors. The international norm have been that water charges should not exceed 5% of the household income.

Accessibility matrix

Level of accessibility problem	
High	low

High		
Social policies to ease accessibility problems		
Low		

Is there a problem of access

How is access defined

What social policies are in place

Operators required to provide access

- Universal service obligations
- Connection targets

How to reduce connection charges

- Choosing cheaper technologies
- Spreading costs over time through financial arrangements
- Cross-subsidies between new and existing customers
- Using public money for connection

Are there policies vis-à-vis independent providers

Within this framework, analysis will be carried out to investigate the relationship between policymakers, private operator, the regulatory body, and the population (both who have access and those who are not connected).

As for the definition of regulation, there is much more ambiguity since it depends on whether an economist, a lawyer, a political scientist or a social scientist defines it. Therefore the definition will vary according to disciplinary setting and researchers preferences. The economist tries to narrow it down in order to reduce complexities which focuses on economic agents and economic outcomes (Minogue 2005). Kirkpatrick et al. (2004, p. 292) for example refer to it as the diverse set of instruments by which governments set requirements on enterprises and citizens. It includes laws, orders and rules issued by all levels of government and by non-governmental bodies to whom governments have delegated regulatory powers. Here regulation not only means creating institutions, but defining the “rules of the game”. Lawyers would take a broader meaning of rules and institutions, while political scientists will also imply institutions and policy process. The broadest definition of regulation is taken by social scientists, who imply it with the social processes and social interest.

Methodology

The first part will consist in writing an issues paper on private sector involvement in water. This will consist in reviewing literature, the current context in which the infrastructure reforms (such as water) are taking place, presenting statistics on the nature of private investment and aid in the water supply sector, and results of private sector involvement achieved so far. This paper will set the context in which this project will take and provide the scope for the research.

In order to better understand the nature of the debate and practice, this research will use both case studies approach and cross country analysis. Case studies will allow to gather data, take account of the in-depth issues surrounding the debate within the local political, cultural and economic settings of each country.

Case studies

Case studies will be chosen based on several criteria such as regional balance, geographic settings, level of economic development, level of poverty, degree of private sector involvement, degree of regulatory instruments in place, degree of problems in the water supply sector (level of access, availability/scarcity of water, ...) degree of “success”, “failures” or “in difficulties”, availability of reliable data, availability of researchers.

After reviewing the above criteria, the following country could potentially be taken as case studies (See annex table for details).

1. **France** : long tradition of private sector involvement with strong regulatory mechanisms in place. Around 85% of water supply is operated through private sector
2. **United Kingdom** : private sector participation started in 1989 and UK could be a good case study to see the results achieved so far, in terms of social policies in affordability, access and regulation.
3. **Brazil** : privatization of water supply has been resisted in several cities in Brazil. There are some good examples of public water companies operating effectively and with participation from civil society and consumers (example in Porto Alegre, Sao Paulo). However, there are also several private companies operating in other cities such as, Vivendi was awarded a contract in Sanepar (1998), which is having problems. Suez was awarded a contract in Manaus and in Campo Grande (Mato Grosso) in 2000.
4. **Argentina** : Argentina received the highest amount private investment in water supply since 1990 and was considered as flagship privatisation of water supply. In 1993 concession in Buenos Aires was awarded a Suez-led consortium. By 2001, it had ran into difficulty because of the Argentinian economic crisis. Contract of Azurix in Greater Buenos Aires, which started in 1999 was terminated in 2002 because of economic difficulties. The Gran Buenos Aires was renegotiated. In Cordoba, the Suez-led consortium started a concession in 1997. In 1995 Vivendi was awarded a concession for Tucuman is running into difficulty. Vivendi also secured contracts in Catamarca.
5. **Chile** : despite intensive opposition against privatization, the government did privatise the services. Suez controls Santiago (1999), Anglian water in

- Valparaiso (1999), RWE-Thames in Concepcion and other regions. In Chile, coverage is not an issue since almost everyone has access to piped water.
6. **Philippines** : it was one of the first countries in Asia to involve private sector in water supply since 1996. For example, the city of Manila, has been considered the largest world privatization (concession) in 1997. Divided into two areas (West-Suez and East-United Utilities-Bechtel-Mitsubishi). Suez is running into difficulty and is before courts. Cebu concession is ran by Ayala through BOO. Butong ran by WaterWorld (US) through prepaid system. Baguio under consideration. Subic Freeport privatized in 1996, led by Biwater (UK) through concession is running into difficulty. Vivendi (Veolia) operates in Fort Bonifacio (Manila) since 1998 and in Clark.
 7. **China**: together with other reforms in the economy, China has been involving the private sector water supply. For example Suez has 4 concessions contracts in Tangu, Sanya, Chongqing, Tanzhou and several BOTs. Suez withdrew from Shenyang city because of difficulties. Veolia had several (8) contracts (concessions, BOT) such in Shenzhen, Chengdu, Zunyi, Beijing, Lugouqiao, Tianjin, and also Nanching and Jinan through its subsidiaries. It ended a contract in Xian in 2002. Suar also holds a BOT contract in city of Harbin.
 8. **Thailand**: it has relatively good public companies operating the water supply, especially in Bangkok. However, corportization of Bangkok waters is in progress through US firm Tasman Asia. But privatization aborted, instead shares will be offered to public with government majority. Pathum Thani, Nakhon Pathom and Samut Sakhon led by Thames Water through BOT
 9. **India**: Private sector involvement has been limited. Suez has bulk water supply contract in Sonia Vihar (Delhi), Mumbai, Kolkata. Veolia also has contracts in Kolkota and Chennai. There are huge problems of access to water supply.
 10. **South Africa**. Several municipalities such as Stutterheim, Fort Beaufort, Queenstown, Nelspruit, Dolphin Costs and Johannesburg have involved private sector in running their water supply.
 11. **Niger**: Vivendi is operating water supply in the country since 2001 under a lease contract.
 12. **Senegal**: Saur has been running water supply since 1996 under a lease contract
 13. **Morocco**: it is one of the rare countries in the region that has embraced private sector involvement in water supply. For example, Casablanca is run by Suez. Redal consortium in Rabat. Vivendi-led consortium in Tangier and is buying Redal
 14. **Egypt**: much of the private sector involvement in Egypt has been limited to construction contracts financed through aid. Suez has been in talks in Ramadam city, Vivendi has been awarded contracts to built water facilities for coastal resorts (Sahl Hasheesh). Thames subsidiary got contracts for El Malha resort in South Sinai. Some US companies are active in middle Egypt, Alexandria and Mansoura.
 15. **Jordan** : has private sector management contracts for short periods. For example Amman is run by Suez since 1999 and is operating wastewater facilities in Al-Samra. Vivendi has wastewater facilities in Ramtha.
 16. **Romania** : several private companies are running the water supply in major cities such as Bucharest, Ploiesti, Timisoara.
 17. **Croatia**: RWE/Thames operating in Zagreb through BOT

18. **Poland** : Suar is operating in Gdansk, while International Water/United Utilities are in Bielsko Biala. However, Poland has many municipalities who are running their water supply through European Investment Bank financing (loans). So it would be instructive to see how these public companies are performing compared to the private ones.

Each case study will address the above-mentioned issues of access, affordability, social policies and regulation from a multi-disciplinary approach. It will also use extensive data to support its findings and analysis.

Data

Each case study will rely on income and expenditure household survey data to analyse the effect of private sector involvement in water supply. The data needs to be disaggregated according to income groups to see which groups have what level of access to water services. In addition, this disaggregated data will also be used to find out more about affordability issues.

Several years of data (times series) will be used to evaluate the impact of private sector involvement in the selected cities. It should be reminded that there could be a problem of time-trend, implying there is a general upward trend in the access despite whether it is the private or the public sector which is providing the service (public or private). In this case, proper caution is required when inducing results.

In most of the cases, data is already available with the country statistical offices. Researchers should be in a position to procure these surveys. However, the quality and reliability of the existing data needs to be analyzed. This will consist in verifying certain methodological issues such as sample sizes, questions asked, and comparison with other data if available. When the country does not have household survey, researchers will be required to generate their own data using appropriate sampling methods such surveys, interview, consultation. However, this should not be the main objective of the project.

Various other tools and techniques will also be used for the case study such consultations and interviews with officials (public and private), civil society, international organizations and academics, covering national and local press, analyzing business reports of the private/public companies who are operating the system, analysis of the contractual agreements between the parties, analyzing the tendering/bidding process, renegotiation process if any, analyzing any other relevant secondary data, and any other relevant developments and issue in the sector.

Cross country analysis

Using the data from each case study, a cross-country level analysis will be carried out. This will be based on cross sectional times series econometrical methods to illustrate the general trend of private sector impact on access and affordability. The following model will be used.

$$y_{it} = \beta x_{it} + \mu_{it}$$

y_{it} will be our dependent variable consisting of access and affordability, for country (city) i at time t according to income levels, and x_{it} are explanatory variables (private sector investment in water supply, aid, subsidies, and other relevant variables such as poverty levels, income inequality, income levels, etc). This model will also include dummy variables such as involvement of private sector, regional variables, etc. μ_{it} is the error term comprising of $\mu_{it} = e_t + c_i + \varepsilon_{it}$ where e_t affects all observations for time period t (time effect), c_i affects all observations for cross-sectional unit I (country effect), and ε_{it} is the error term, which could include omitted variables and measurement error (affects only observation it).

This research will focus mainly on domestic (drinking) piped water supply in urban areas. Water supply rural areas will not be covered in this research as well as agricultural and industrial water use. The issues surrounding irrigation and rural water supply are quite distinct from urban water supply, where the private sector involvement is relatively limited. Issues of sanitation are not the prime focus here, but it will be dealt with in the case studies.

Output

Each case study with its data will represent a stand alone research paper. This will be published by UNRISD as a Discussion Paper. The cross sectional paper, using the data from the case studies, will be a stand alone paper. The main output of the research will be an edited volume. Journals will also be contacted to explore if they could publish a special issue on the topic.

Timeframe (tentative)

June-July 2005	Finalize issues paper Identify paper writers Finalize selection of case studies
August-Sept	Issue contracts and follow-up administrative tasks
Sept.	Convene a workshop on methodology
Sep-Dec 05	Gathering and analyzing data, writing paper Writing overview paper as soon as data is available
March 06	Workshop to present findings
March-April 06	Finalize papers
May 06	Peer review

June 06

Finalize papers for publication

Annex

Some statistics on water: private sector investment, ODA, Household connection rates, and status of private sector involvement

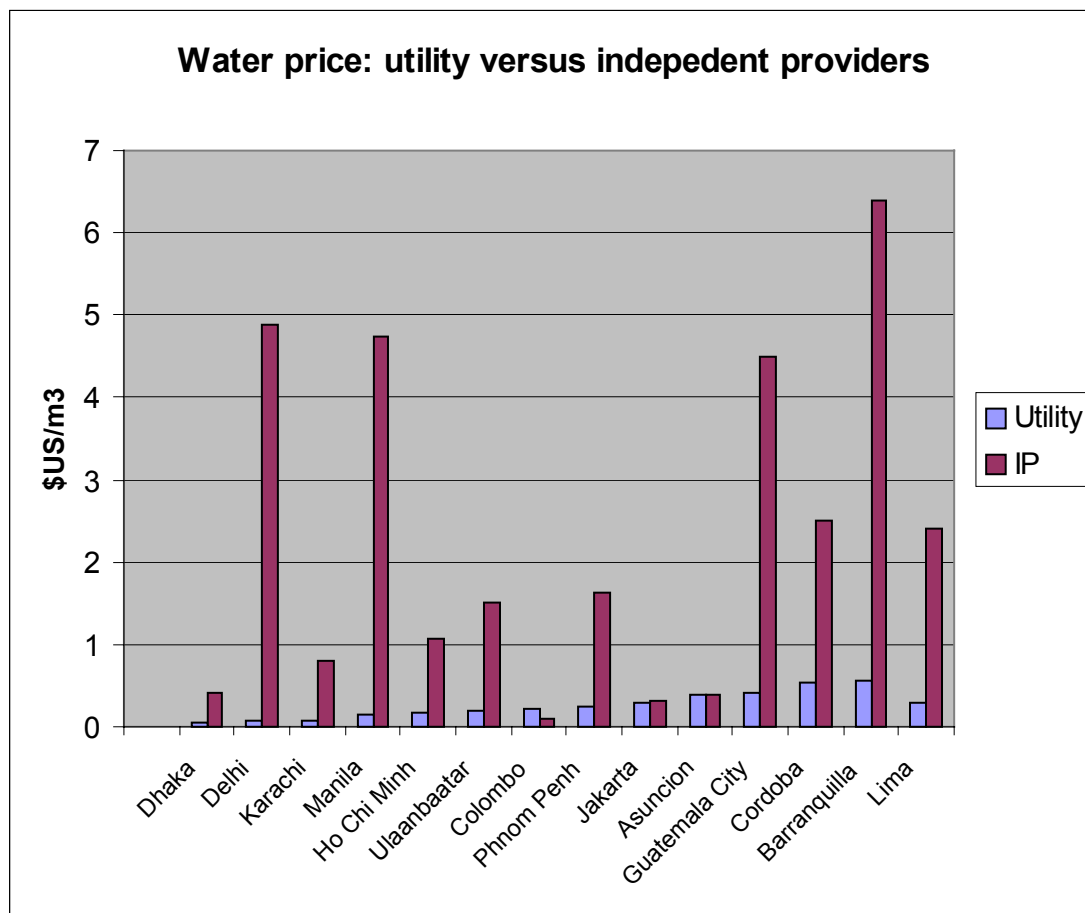
Country	Private investment in water and sanitation 1990-2003 (US\$ millions)	ODA 1990-2003 (US\$ millions)	Total Household connection 1990 (2002 in ()) %	Urban household connection 1990 (2002 in ()) %	Private sector involvement status
Argentina	8239	152.45	69	76	In 1993 concession in Buenos Aires was awarded a Suez-led consortium. By 2001, it had ran into difficulty because of the Argentinian economic crisis. Contract of Azurix in Greater Buenos Aires, which started in 1999 was terminated in 2002 because of economic difficulties. The Gran Buenos Aires was renegotiated. In Cordoba, the Suez-led consortium started a concession in 1997. In 1995 Vivendi was awarded a concession for Tucuman is running into difficulty. Vivendi also secured contracts in Catamarca. Santa Fe led by Suez
Philippines	5867.7	1034.41	21 (44)	37 (60)	Manila, largest world privatization (concession) in 1997. Divided into two areas (West-Suez and East-United Utilities-Bechtel-Mitsubishi). Suez is running into difficulty and is before courts. Cebu concession is run by Ayala through BOO. Butong ran by WaterWorld (US) through prepaid system. Baguio under consideration. Subic Freeport privatized in 1996, led by Biwater (UK) through concession is running into difficulty. Vivendi (Veolia) operates in Fort Bonifacio (Manila) since 1998 and in Clark.
Malaysia	5095.1	554.56			BOT since 1990s, mainly local companies. Kelantan utility (Thames) ran into difficulty and was bought back by government. KL corporatized company, which government wants to privatize. Water is bought through concession contracts. Thames has two technical services agreements (concessions) with the state of Johor and State of Sabah. Biwater (UK) is active in Bukit Badong. Suez has water distribution contracts in Kota Kinabula (Sabah State), without any control of operations. Veolia has operations in Ipoh (capital of Perak state) and projects in Johor and Sabah. It ended its contract in Selangor State in 2003.
Chile	4008.9	67.34	86 (92)	98 (99)	Suez controls Santiago (1999), Anglian water in Valparaiso (1999), RWE-Thames in Concepcion and other regions.
Brazil	3519.5	466.41	74 (78)	90 (91)	In 1998, Vivendi was awarded a contract in Sanepar, which is running into difficulty. Suez was awarded a contract in Manaus and in Campo Grande (Mato Grosso) in 2000.
China	2543.1	3047.89	49 (59)	80 (91)	Suez has 4 concessions contracts in Tanggu, Sanya, Chongqing, Tanzhou and several BOTs. Suez withdrew from Shenyang city because of difficulties. Veolia had several (8) contracts (concessions, BOT) such in Shenzhen, Chengdu, Zunyi, Beijing, Lugouqiao, Tianjin, and also Nanching and Jinan through its subsidiaries. It ended a contract in Xian in 2002. Suar also holds a BOT contract in city of Harbin.
Romania	1135	17.32	(49)	(79)	Bucharest and Ploiesti are run by Vivendi, while Suez runs Timisoara.
Morocco	1000	855.09	41	75	Casablanca is run by Suez. Redal consortium in Rabat. Vivendi-led consortium in Tangier and is

			(57)	(92)	buying Redal
Turkey	942	1469.54	50 (52)	64 (64)	RWE-Thames operating in several cities such as Ankara, Ismit. Suez is operating in Antalya, Serco (UK) in Adana
Indonesia	923.1	1635.36	10 (11)	26 (31)	Jakarta Concession to private company-a joint venture between Suez, Thames and local company, since 1998. Running into difficulty. Suez has BOT contract in Medan and Tangerang. United Water seems to have a BOT contract in Sidoarjo
Bolivia	682	292.66	53 (75)	76 (92)	Suez had won a concession in La Paz, El Alto in 1997. The International Water-led consortium started a contract in 1999, which was cancelled in 2002.
Mexico	643.9	726.55	78 (89)	89 (96)	Aguas de Barcelona, Severn Trent and Azurix (owned by US Enron) are running Cancun and Mexico city
Cuba	600	10.29	65 (74)	77 (82)	Aguas de Barcelona was awarded a contract in 2000 for Havana
Ecuador	550	246.77	55 (59)	74 (77)	International water was awarded a contract for Guayaquil in 2002
Thailand	500.5	836.25	28 (34)	69 (80)	Corporatization of Bangkok waters in progress through US firm Tasman Asia. But privatization aborted, instead shares will be offered to public with government majority. Pathum Thani, Nakhon Pathom and Samut Sakhon led by Thames Water through BOT
Uruguay	361	3.51	(91)	95 (94)	Aguas de Barcelona won a contract in 1998. Recently, Uruguay made it illegal to privatize water by constitutional amendment. D18
Czech Republic	351	7.95			Vivendi/Anglian Water in Prague, Anglian in Karsbad, Southern Bohemia. Suez is operating Brno, Ostrava, Karlsbad. Vivendi is present in North Bohemia, Pilsen and Olomouc. And Suez is operating in Sumperk
Colombia	330	89.94	78 (85)	94 (96)	Cartagena was awarded to Aguas de Barcelona in 1995.
Croatia	299	46.83			RWE/Thames+D47 operating in Zagreb through BOT
Honduras	220	415.27	59 (72)	82 (92)	Acea was awarded a contract in 2001 for San Pedro Sula
India	216	1743.73	17 (24)	51 (51)	Suez has bulk water supply contract in Sonia Vihar (Delhi), Mumbai, Kolkata. Veolia also has contracts in Kolkata and Chennai.
South Africa	212.8	169.8	58 (60)	94 (82)	Suez obtained contracts in Stutterheim, Fort Beaufort (Nkonkobe) and Queenstown. They have ran into difficulties, cancelling the Nkonkobe contract. Nelspruit (Province of Mpumalanga) went to Biwater in 1998 and Dolphin Coast to Suar. Suez got management contract for Johannesburg in 2000. Vivendi is also present in Durban.
Vietnam	212.8	1017.78	11 (14)	51 (51)	Contract with Suez for water treatment in Thu Duc (Ho Chi Minh City) was cancelled in 2003. Suar also operates in Quang Ninh province (cities in H-Long, Campha, Viet Hing and Hoang Bo).
Hungary	178.9	11.88	85 (84)	92 (93)	Suez operates in Kaposvar, Pecs and Budapest is ran by Suez/RWE, and sewerage by Vivendi. Vivendi operates in Szeged.
Papua New Guinea	175	46.04	(11)	61 (61)	BOT in Port Moresby

Jordan	169	861.28	95 (87)	99 (89)	Amman is run by Suez since 1999 and is operating wastewater facilities in Al-Samra. Vivendi has wastewater facilities in Ramtha.
Bulgaria	152	19.79	98	100 (100)	International Water/United Utilities operating in Sofia
Russian Federation	128	92.66	77 (81)	87 (92)	Technical assistance provided in Kaliningrad by Stockholm Vatten (municipally owned water company), and in St. Petersburg by Stockholm Vatten and Helsinki Water Works, with UK private water company Severn Trent.
Trinidad and Tobago	120	0.04	77 (77)	81 (80)	Severn Trent was awarded a management contract in 1994 till 1999.
Estonia	81	12.91	(87)	96 (96)	International Water/United Utilities operating in Tallin
Peru	56	969.6	56 (72)	74 (84)	An Italian company Acea won a contract for Pio Chillon in 2000. D34
Saudi Arabia	52	1.37	89	97 (97)	Japan's Sumitomo is building water plants in Jubail. Vivendi and South Korean firms are also investing. Jeddah BOT in progress.
Belize	49.6	2.78	(80)	92 (99)	Biwater/Nuon won contract to operate Belize Waters
Venezuela, RB	44	58.4	(81)	79 (84)	A service contract went to AAA for the State of Zulia and Maracaibo.
Kazakhstan	40	252.06	62 (61)	88 (88)	Vivendi is operating in Almaty
Panama	25	11.55	(85)	96 (96)	Privatization in progress
Poland	22.1	32.73	78 (95)	93 (99)	Suar is operating in Gdansk, while International Water/United Utilities are in Bielsko Biala.
Barbados	20.5	1.01		98 (100)	Desalination of water.
West Bank and Gaza	9.5	918.94	(83)	(91)	Suez has management contract in Gaza, while Vivendi operates in Bethlehem and Hebron.
Senegal	6.3	370.18	22 (40)	50 (71)	Suar runs urban water utilities since 1996 through lease contract
Egypt, Arab Rep.	6	2027.84	61 (80)	89 (98)	Suez is present in Ramadam city, Vivendi has been awarded contracts to built water facilities for coastal resorts (Sahl Hasheesh). Thames subsidiary got contracts for El Malha resort in South Sinai. Some US companies are active in middle Egypt, Alexandria and Mansoura.
Niger	4.9	186.67	3 (8)	19 (35)	Vivendi was awarded a lease contract in 2001 for urban cities including Niamey
Tanzania	4.8	405.67	10 (16)	30 (44)	Privatization in progress
Central African Republic	0.7	61.32	1 (4)	2 (9)	Suar has a lease concession in all urban areas

Mozambique	0.6	301.25	(11)	(28)	Suar ran urban cities (Maputo, Beira, Quelimane, Nampula, Pemba) till 2002, when it withdrew. This was financed through HIPC initiative.
Armenia	0	28.3	(85)	97 (97)	Yerevan concession operated by Acea
Azerbaijan	0	55.88	41 (47)	63 (76)	In progress
Gambia, The	0	37.73	(12)	(39)	Vivendi was running a management contract since 1993, but was cancelled.
Guyana	0	47.91	(53)	(66)	Severn Trent operating in the country to manage water supply.
Lebanon	0	268.21	(98)	100 (100)	PSP in progress
Namibia	0	149.94	31 (39)	83 (76)	Vivendi with a German partner is operating in Namibia
Slovak Republic	0	0.82		(80)	Corportized and raising funds in Bratislava.
Uganda	0	351.6	3 (1)	24 (8)	Suez has a management contract in 33 towns in the country.

Source: WDI 2002; OECD 2005; WHO/UNICEF 2004; PSIRU website



Source: UN World Water Development Report 2003; World Bank 2003 (Independent water entrepreneurs in Latin America: the other private sector in water services).

Other privatization prevented or threatened

Country	City	Year	Type
Poland	Lodz	1994	Privatisation prevented
Honduras	Honduras	1995	Privatisation prevented
Hungary	Debrecen	1995	Privatisation prevented
Sweden	Malmo	1995	Privatisation prevented
Argentina	Tucuman	1996	Termination and reversion to public
Germany	Munich	1998	Privatisation prevented
Brazil	Rio	1999	Privatisation prevented
Canada	Montreal	1999	Privatisation prevented
Panama		1999	Privatisation prevented
Trinidad		1999	Termination and reversion to public
Bolivia	Cochabamba	2000	Termination and reversion to public
Brazil	Limeira	2000	Incomplete termination
Germany	Potsdam	2000	Termination and reversion to public
Hungary	Szeged	2000	Incomplete termination
Mauritius		2000	Privatisation prevented
Thailand		2000	Termination and reversion to public
USA	Birmingham	2000	Termination and reversion to public
Argentina	BA Province	2001	Incomplete termination
France	Grenoble	2001	Termination and reversion to public
Brazil		current	Continuing campaign
Ghana		current	Continuing campaign
Indonesia	Jakarta	current	Continuing campaign
S Africa		current	Continuing campaign
Uruguay		current	Continuing campaign

Source: PSIRU website www.psir.org

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