IMTA-OECD Expert Meeting

For a beneficial private sector participation in the water and sanitation sector, lessons learnt from Latin American country experience

Mexico, 4-5 September 2008

Jointly organised by the Mexican Institute of Water Technology (IMTA) and the Investment Committee of the Organisation for Economic Co-operation and Development

Optimising Private Sector Participation in Water Infrastructure

Draft Checklist for Public Action

This paper is still work in progress. It is distributed to serve as background material for the IMTA / OECD Expert Meeting. The views expressed in this paper do not necessarily represent those of the OECD or its member governments.

Contact: Céline Kauffmann (celine.kauffmann@oecd.org)

TABLE OF CONTENTS

FOREWORD

1. Recognising the critical importance of infrastructure sectors, including water and sanitation, for growth and sustainable development, the OECD Council approved in March 2007 the OECD *Principles for Private Sector Participation in Infrastructure*. The *Principles* are intended to serve as a first step to help governments that wish to involve the private sector in the development of infrastructure, by offering a coherent catalogue of policy directions to be assessed as part of their development strategies in light of their own national circumstances and needs. They were developed in consultation with a broad group of public and private sector experts as well as from non-governmental organisations, and build on the lessons learned on public-private partnerships in recent years. They cover five main sets of challenges:

1. Deciding on the utility and nature of potential private sector involvement;
2. Providing a sound institutional and regulatory environment for infrastructure investment;
3. Ensuring public and institutional support for the project and choice of financing;
4. Making the co-operation between the public and private sectors work;
5. Communicating government's expectations about responsible business conduct to private partners.

2. In response to the international community's call for strengthened efforts to ensure adequate provision of water and sanitation services, a specific application of the *Principles* to the water and sanitation sector was launched. The initiative constitutes one element of a major OECD cross-cutting programme on the water policies for affordable services and sustainable resources management. It complements recommendations developed by the OECD Water Programme on pricing and realistic financing strategies. Establishing practical guidance to optimize private sector participation in water and sanitation infrastructure involved the development of a conceptual framework based on the *Principles*, building an information base of country experiences and engaging discussions at the regional level. To this end, the NEPAD-OECD Africa Investment Initiative Roundtable organized in Lusaka in November 2007 focused on the lessons learned from African countries experience; in March 2008, the OECD and the Asian Development Bank held an expert meeting in Manila to draw on the experience of Asian countries; and in September 2008, the OECD and the Mexican Institute of Water Technology organised a consultation in Mexico for Latin America. The Stockholm World Water Week held in August 2008 provided an opportunity for consultation with civil society and the broader water expert community.

3. The resulting guidance provides a checklist of the main specificities of the water and sanitation sector that bear on public-private cooperation and of the key policy issues for consideration by governments. It also provides a set of available tools and practices, building on recent country experiences. The focus is mainly on developing and transition economies where extending the relevant infrastructure constitutes a major challenge, but builds on practices and tools from both OECD and non-OECD countries. The guidance recognises the sheer diversity of the private sector operating in water and sanitation, which is far from limited to multinational companies, and the variety of forms of participation and risk-sharing arrangements.

EXECUTIVE SUMMARY

4. ***In the past 20 years, a number of governments have sought to involve the private sector in the development and management of their water systems.*** Halving the proportion of people without access to drinking water and sanitation by 2015 would require investments of some 30 billion USD per year, twice the current spending levels. Both additional funding and more efficient use of available resources are necessary. The OECD *Water at a Glance* information base shows that most developing countries have sought to involve the private sector to varying degrees, as a source of financing, but also to improve efficiency in service delivery, reduce costs, contribute to long-term sustainability and favour technology transfer. Private actors, in the form of small-scale providers, have also helped alleviate the deficiencies of service provision where it has failed to keep pace with rapid population growth and urban migration.

5. ***Forms of private sector participation vary widely***. The private sector operating in water and sanitation is diverse and fragmented: it involves international investors, local and regional actors, small-scale water operators, private sector whose core activity is not water, including large users (such as the beverage and mining companies) and the finance community, joint ventures between public and private companies as well as public companies operating abroad as private participant to competitive bidding. Mimicking this diversity, risk-sharing arrangements are becoming increasingly context-specific and covering the overall spectrum from full divestiture to non-financial forms of participation.

6. ***A number of experiences involving the private sector have fallen short of expectations***. The specificities of the water and sanitation sector may explain the difficulties and constitute constraints on private participation: (i) the sector involves high fixed costs coupled with long-term irreversible investments, (ii) water is a basic need with important externalities on health, gender equality and environment justifying government intervention, (iii) water and sanitation are managed at local level, exposing private sector to sub-sovereign risk, (iv) the organization of the sector is complex, both due to the number of stakeholders and segmentation of responsibilities across government tiers and agencies, (v) the long-term relationship exposes the private sector to contractual and regulatory risk, as well as foreign-exchange risk.

7. ***Most countries have increased their efforts to achieve regulatory stability and predictability.*** The OECD regional consultations have shown the pivotal role of the regulatory framework for successful partnerships and more generally for improved governance in the sector. Partnering with the private sector involves long-term commitments in terms of pricing policies, organization of the sector, the pace of network expansion and may also determine technology choices. Failure to honour contracts and abrupt changes in the regulatory framework can be costly. The choice of involving private sector should take into account costs and benefits - including assessing the local capacities to handle the relationship and evaluating financial sustainability of the project - and result in careful definition of contractual arrangements (output based, realistic incentives to improve coverage and efficiency, dispute resolution mechanisms…).

8. ***However, regulatory frameworks often remain incomplete.*** In many countries, the sector is still characterised by unclear allocation of responsibilities across stakeholders: across public and private partners, but also across different government tiers and agencies. Multiplicity of government agencies responsible for implementation and oversight has led to dilution of responsibilities and unclear reference point for private actors.

9. ***Managing the flexibility required to sustain long-term commitments in a constantly changing environment while ensuring regulatory stability also remains a great challenge for most countries wishing to attract private investment***. The public and private partners still need to acknowledge that complete contracts that would provide for all potential risks do not exist and the value of frequent discussions. The regulatory framework and contracts should support this process through clear consultation, information sharing and dispute resolution mechanisms.

10. ***Transparent, accountable, and effective regulations are equally important for public operators.*** The obstacles to water and sanitation infrastructure development are largely unrelated to ownership. Private sector participation has helped bring to light the tensions that the development of water infrastructure generates, tensions that remain largely hidden when infrastructure is kept in the public sector.

11. ***A Checklist for Public Action in the water sector has been developed by the OECD and its partners***. This checklist is intended to assist governments in (1) deciding on the utility and nature of potential private sector involvement; (2) providing a sound institutional and regulatory environment for infrastructure investment; (3) ensuring public and institutional support for the project and choice of financing; (4) making the co-operation between the public and private sectors work; and (5) communicating government's expectations about responsible business conduct to private partners.

12. ***The project makes four general recommendations to governments:***

- Institutional and regulatory frameworks and long-term water policy should be set by government for all operators, be they public or private.

- Allocation of roles across existing government bodies and responsible authorities should be clearly defined to support effective implementation of regulations and contractual provisions.

- Roles and responsibilities of the diverse private partners should be clarified, the model of their involvement tailor-made to local specificities, in order to make the best of their strengths and provide appropriate incentives.

- Governments should take into account the Checklist for Public Action.

INTRODUCTION

An evolving environment

13. Water and sanitation is a key sector where much effort is needed: with over a billion people without access to drinking water and 2.6 billion lacking basic sanitation, developing the relevant infrastructure constitutes a major challenge. Halving the proportion of people without access to drinking water and sanitation by 2015 would require substantial investments of some 30 billion USD per year, twice the current spending levels. OECD countries also face significant financial challenges to replace ageing water infrastructure and comply with ever-stringent water regulations: France and UK for instance need to increase spending on water by 20 percent and Japan and Korea by over 40 percent to maintain current services. To meet these tremendous needs and expand their infrastructure in a context of tight budgetary constraints, but also in an attempt to improve the efficiency of – often deficient - water systems, many developing and emerging countries have sought the involvement of the private sector.

14. Financial constraint was combined in the past decades with dramatic changes in the organization and the governance of the water sector. Management issues have evolved in a context of growing financing constraints from massive infrastructure developments towards resource allocation, quality control, improved maintenance and preservation. This has been accompanied by deep changes in policy making, and the emergence of new paradigms - such as decentralisation and local governance, participation and equity, financial viability, and environmental sustainability. It has also led to new division of competences, with public functions focusing on policy making and regulation, and water operators, increasingly autonomous and self-funded, in charge of infrastructure management and operations.

15. At the same time, a number of experiences involving the international private sector as witnessed since the 1990's have fallen short of expectations and led to sometimes highly politicized debates. The causes were often of poor understanding of the risks involved by private sector participation in a complex sector and inadequate framework conditions. This contributed to catalysing public attention on the conditions and role for the private sector in developing and managing water systems, as well as more generally on service quality and inequality of access. It also led to rapid changes in the forms of private sector involvement, towards less risky contracts (service, management contracts and Greenfield projects), the emergence of new actors (local and regional), and a growing recognition of alternative small-scale and very often informal private providers. The sector also witnessed an increase in technical complexity, especially in the water treatment segment of the value chain, with rapidly developing technologies in desalinisation and reuse.

16. Past difficulties have shown the complexity of the interaction between the public and the private partners in the water sector:

(i) high fixed costs coupled with long-term irreversible investments and inelastic demand make it a monopolistic sector where competition is difficult to introduce and regulation is key,

(ii) water is a basic need and quality of access has important externalities on health, gender equality and environment justifying political interest,

(iii) water and sanitation are local issues calling for local management, but the importance of externalities and of taking into account the full water cycle requires an integrated water resource management approach,

iv) the sector involves numerous stakeholders, but suffers from segmentation of responsibilities – notably across government tiers and public agencies,

(v) the water and sanitation sector cumulates contractual risk, foreign-exchange risk, sub-sovereign risk, political interferences, and complex pricing policies with multiple objectives: cost recovery, economic efficiency, environmental objectives, equity and affordability.

17. In that context, the current heated debate on private vs. public is largely misleading for two main reasons. First, the obstacles to water and sanitation infrastructure development are largely unrelated to ownership. The legal framework remains very similar, whatever the provider[1]. Private sector participation brings to light the tensions that the development of water infrastructure generates, tensions that remain largely hidden when infrastructure is kept closely in the public sector. In that sense, most recommendations to optimise private sector participation, including the OECD *Principles*, remain relevant tools to facilitate infrastructure development projects regardless of the partners (public agencies, municipalities…).

18. Secondly, the debate on private vs. public has so far largely overlooked the diversity of private actors that are concretely involved in water and sanitation and include, apart from the large networked utilities run by international corporations, the small-scale actors, which already cater for the poorer customers in smaller cities, peri-urban and remote areas of most developing countries, and a continuum of partnerships between private operators, public actors and communities. Most systems are increasingly hybrid and rarely either purely public or purely private. The partnerships are also in effect multi-stakeholders as they involve, in addition to the "private" entity, different tiers of governments, the consumers and the communities. Consequently, they can hardly be reduced to a face to face between an homogenous public entity and a single private actor. The OECD *Checklist for Public Action* aims to clarify the roles and responsibilities of the different stakeholders.

Why a checklist for public action?

What is the checklist for public action?

19. The *Checklist for Public Action* is a concise tool that, within a unique logical framework, defines the main specificities of the water and sanitation sector that bear on the cooperation between the public and the private sector; identifies key policy issues for consideration by governments; and provides a set of available tools and practices, building on recent country experiences. It is intended to help governments and other stakeholders properly assess and manage the implications of involving private actors in the financing, development and management of water and sanitation infrastructure, including appropriate allocation of roles, risks and responsibilities and framework conditions necessary to make the best of such partnerships. It builds on the OECD *Principles for Private Sector Participation in Infrastructure*, but for concision purposes, the annotations contained in the original *Principles* are not reported here.

20. The structure of this checklist for public action is the following:

Chapter I describes the scope of the work and defines the key concepts.

[1] Franceys (2006). Regulating Public and Private Partnerships for the Poor.

Chapter II constitutes the core of the *Checklist for Public Action*. It is organised around the 24 OECD *Principles for Private Sector Participation in Infrastructure* in the form of a matrix.

Chapter III introduces *Water at a Glance*, the information base developed to support the conceptual work, building on the experience of some 30 countries in Africa, Latin America and Asia Pacific.

Who will find this checklist for public action useful?

21. The *Checklist for Public Action* is primarily addressed to governments and other tiers of the public sector that are responsible in last resort for the provision of drinking water and sanitation services. It may however be of use to other constituencies, such as the private sector, users and the international donor community, for a better understanding of the issues at stake and as a platform for policy dialogue.

What makes the Checklist different?

22. "The OECD *Principles* are intended as guidance to public authorities contemplating the involvement of private enterprises as one, among several, options to improve the provision of infrastructure services. They shall not be construed as advocating the privatization or private management of publicly owned infrastructure." As highlighted by the first principle, the private vs. public debate can only be answered locally and through tailor made models.

23. This document does not provide a detailed approach of the steps that should be taken when engineering a partnership. For this, other tools exist such as the PPIAF *Toolkit on Approaches to Private Participation in Water Services*[2], the *Policy Principles and Implementation Guidelines for Public-Private Partnerships for Water Supply and Sanitation* (developed by the Swiss cooperation and implemented by Building Partnerships for Development)[3] and the UNDP *Toolkit for Pro-Poor Municipal PPP*[4]. These tools are largely complementary to the OECD *Checklist for Public Action* in providing, once the nature and implications of partnership fully understood, guidance on specific steps to take.

24. The *Checklist for Public Action* draws on a wide corpus of material from governments, international organisations, NGOs, academia and builds on the experience of selected countries in Africa, Latin America and Asia, for which information has been collected according to a common framework on key dimensions of the water and sanitation sector, as well as on practices from OECD countries.

25. The diversity of the private sector operating in water and sanitation is recognised throughout this *Checklist for Public Action*, including the contribution of the small-scale private actors, of the private sector whose core activity is not water - including the big users and the finance community -, the increased involvement of joint ventures between public and private companies and of public companies operating abroad as private participant to competitive bidding.

[2] http://rru.worldbank.org/Toolkits/WaterSanitation
[3] www.partnershipsforwater.net
[4] www.margraf-publishers.com/UNDP/PPPUE/

CHAPTER I. DEFINITIONS AND CONCEPTS

26. The Checklist aims to facilitate the development of infrastructure with a view to increasing sustainable access to safe and reliable drinking water and proper sanitation facilities. The focus is therefore mainly on developing and emerging countries, where extending the relevant infrastructure constitutes a major challenge. High-income countries also face substantial investment needs in order to maintain and replace ageing networks[5] but issues and conditions differ depending on the level of development, most notably in terms of institutional and regulatory framework development (the rooting of institutions, the decentralization process) and of level of access to water and sanitation (low access combined with multiple alternatives in less developed countries). The practices of OECD countries are however presented when relevant, as they provide useful insights on issues at stake and possible policy responses.

27. This work focuses on access to drinking water and sanitation. It does not tackle other key water uses such as irrigation or hydroelectricity. However, another dimension of the OECD Water Programme addresses water for agriculture, more specifically tackling the pricing and sustainable use issues. For the purpose of this work, water and sanitation infrastructures include upstream facilities, as well as distribution and sewerage networks. As traditionally defined, water delivery systems involve 6 components[6]: (1) capture of the natural resource, (2) treatment to ensure adequate quality for use, (3) transportation (primary network: aqueducts and mains), (4) delivery to users (secondary network: pipelines and taps), (5) wastewater capture and (6) treatment. The sanitation sector, outside the sewerage network, is highly segmented and involves many different actors around the initial provision of facilities, waste removal and transport and waste treatment.

28. Among these activities, upstream water activities, such as extraction, water treatment and downstream activity of wastewater treatment involve a buoyant (often international) private sector activity, generally in the form of Build, Operate and Transfer (BOT) contracts. Thriving business opportunities are developing in water purification and desalinization, taking advantage of the greater focus on quality and the concern over resource scarcity. Direct services to users also involve some private sector participation in the form of concession, lease or management contracts, although public ownership and management of the main networks remain the norm in many countries. Substantial private participation has also developed in most countries for service delivery in the poorer and isolated areas in the form of small-scale, often informal, operators. Worth noting, there is also a thriving emerging market for bottled water.

29. The issues involved by private sector participation partly differ depending on what segment of the value-chain is considered. Upstream extraction and treatment activities may appear more attractive to private sector as they can be more easily ring-fenced (notably in terms of revenue) and their specific output more easily defined. They however raise important regulatory challenges pertaining to regulation of water quality and necessitate careful assessment of the costs of oversight of decentralised activities vs. restricted number of suppliers. On the other hand, management and development of water networks pose specific challenges. It is perceived as much more risky by private operators, who, depending on the contractual arrangements, rely more or less on tariffs as the basis for their revenue, are in direct contact with the general public and operate in a very sensitive area for policy making.

[5] OECD (2006). Infrastructure to 2030:Telecom, Land Transport, Water and Electricity.
[6] Kessides (2004). Reforming infrastructure. Privatisation, regulation and competition.

The private actors

Table 1.1. Categorizing Water Supply Small-Scale Private Service Providers

Features	Dependent	Independent
Piped networks		
System	Operator buys water in bulk from utility and develops distribution sub-networks connected directly to households, institutions and public kiosks stand posts.	Operator develops own water sources (wells or boreholes) and connects network to households and other users.
Organization	Private company or individual, community organization or neighbourhood association.	Sole proprietor, cooperative, private land and housing developer, water user association, community-based organization.
Regulatory Issues	Contract with utility, business license, customer agreements, bulk rates, customer tariffs.	Groundwater abstraction permits, title deeds, resale permits/licenses, water quality testing, business licenses, rights to own infrastructure and/or to lay networks in public rights of way.
Country examples	Operators in partnership with water utilities in Marinilla, Manila and Banteay Meanchey.	Registered operators in Guatemala city. Unregistered operators in Kampala and Cebu city. Private land and housing developers and home owners association in Cordoba, Manila.
Point Sources		
System	Kiosk or stand post connected to the utility network (could be household supply); buying water in bulk - at a special tariff - or at household tariff.	Water point linked to own source (well or borehole, underground or aboveground storage tank) installed privately and operated on a for-profit basis. Water may be purchased from a tanker.
Organization	Individual, enterprise, self-help group.	Neighbourhood association, microenterprise, community based organizations
Regulatory Issues	Contract with utility, license/permit, customer tariff, bulk purchase price, performance incentives.	Groundwater abstraction permit, license, tariff structure, water quality testing.
Country examples	Water kiosk and taps in Nairobi. Franchisers of public bathing facilities in Delhi.	Development of own water points for profit in Kampala. Private baths with independent source of water in Lima. Private owner of well or borehole selling bulk water to public or private mobile vendors in Lima and Karachi.
Mobile distributors		
System	Tankers or truckers obtain water in bulk from the utility (or municipal supply) and deliver it directly to the customer, including public utility water storage tanks, communal cisterns, or individual households and institutions.	Tankers, truckers or carters develop source or obtain water from a private well for distribution to households; public utility water storage tanks, communal cisterns, or institutions.
Organization	Sole proprietor, tanker association, lessee, informal sector.	Sole proprietor, tanker association, lessee, informal sector.
Regulatory Issues	Transport license, business license, tanker cleanliness, bulk rate, utility contract, customer tariff.	Transport license, business license, water quality, abstraction permit
Country examples	Private, registered trucks buying water in bulk from utilities or municipal sources and distributing to storage tanks or individual households (Chennai). Carters, street vendors purchasing water from tankers / kiosks, and delivering water by the can in (Dakar Dar es Salaam). Bottlers and vendors of tap water in Nairobi.	Trucks purchasing water from private wells or untreated sources, registered or not and distributing to storage tanks or individual households in Lima and Kathmandu. Carters, street vendors obtaining water from private wells or untreated sources and delivering water by the can in Nairobi and Mombasa. Bottlers and vendors of purified water in Manila and Shanghai.

Source: Kariuki and Schwartz (2005).

30. The water and sanitation market is fragmented and accommodates a large variety of different agents: international investors, local and regional actors, small-scale water operators, private sector whose core activity is not water but is an important user of water (such as beverage, mining and construction companies), joint ventures between public and private companies as well as public companies operating abroad as private participant to competitive bidding. For the purpose of that work, there is no need to adopt a restrictive definition of private sector as the *Checklist for Public Action* is well adapted to most partnerships. Its rational remains also largely valid for not-for-profit systems (NGOs and community based organizations), although the motivations may differ.

31. In most developing countries, the progress of conventional public service provision has barely kept pace with rapid population growth and migration to urban areas. In that context, small-scale local actors have made up for the deficiencies in public service provision and have sometimes ended up accounting for most of water and sanitation service delivery. Table 1.1 lists the activities of small-scale private service providers depending on their link with the formal system.

32. Even among official private operators, the landscape of service provision has become more diversified in the last 10 years. During the 1990-97, five operators accounted for 53 per cent of projects awarded (Suez, Veolia, Thames, Agbar and Saur) [7]. Five years after, their share had dropped to 23 per cent (over 2003-2005). The new players come from diverse backgrounds: they are water construction or engineering companies, industrial conglomerates seeking to diversify, local companies that formed joint ventures with international operators and local companies expanding and going regional (see table 1.2). Mergers and acquisitions activity in the water sector has also been intense over the last decade, with some 98 corporate transactions registered since 1997, involving some $10 million[8]. Concerns over water resources scarcity and the consequences of climate change in some areas are also supporting the development of opportunities in new technologies such as wastewater reclamation and reuse, desalination plants and advanced filtration membranes.

33. This recomposition of the private sector landscape accompanies a trend among "traditional" international players towards shorter, less risky arrangements involving lower or no investment obligations. Suez, the most active international company in concessions during the first phase of private sector involvement, is today largely withdrawing from developing countries (except china). By contrast, Veolia has become the most active international operator as of 2005, mostly through development of local partnerships. Agbar is also developing a strategy of local partnerships, through joint ownership with local government. Other international players, such as Severn Trent, are concentrating on management and service contracts, with no capital expenditure obligations. The recomposition of private sector landscape is leading to new partnership arrangements and new challenges for policy makers, including regulating more dispersed activities.

Table 1.2. Categorizing recent market entrants

Categories of recent market entrants		Examples
Diversification into water of companies with core business elsewhere.	Firm moving into water as a business opportunity. Boosted by dynamism of BOT in wastewater treatment plants, and by concerns over resource scarcity that drive innovations in desalinisation and reuse technologies.	Wastewater treatment plants: China Desalinisation projects in arid, coastal countries (GE) Trading companies offering water treatment systems, developing

[7] World Bank Water Week, 2007
[8] Pinsent Masons Water Yearbook 2007-2008.

		integrated services (Hyflux)
	Multiutility spreading to water to enjoy economies of scale and cross-subsidies.	RUS & CES (Russia), NWS Holdings (China), JUSCO (India), Ranhill & YTL (Malaysia), Davao Light & Power (Philippines).
	Spread of construction firms, notably through the development of housing estates.	In Asia and Latin America.
Financial and investment companies including water services in their portfolio	Growing worldwide interest of banks and financial groups in buying water service companies.	Consortio Financiero (Chile), CITIC (China).
Expansion by established water operators	Local private operators taking over other projects internally or externally.	Latin Aguas (Argentina), Aguas Nevas (Chile), Tianjin Capital (China), ILFS and IVRCL (India), Ranhill (Malaysia).
	Public companies acting in a commercial fashion and venturing into the market.	Rand Water (South Africa) bidding jointly with Vitens (Netherlands) for a management contract in Ghana.
	Privatisation of former public utilities	EMOS (Chile), SABESP (Brazil)
Joint ventures with foreign operators	To benefit from foreign investors know-how, while mitigating the foreign exchange risk and facilitating local insertion.	Common in Latin America and Asia.
Graduation of small-scale water operators	Official recognition of the role of small-scale operators through their insertion in the institutional and policy framework.	Mauritania delegated management model in small towns.
	Association of local operators to have their voice heard and share information and practices.	APWO (Uganda)

Source: OECD Investment Division, based on OECD (2006).

Modalities of participation and risk-sharing

34. Infrastructure and Participation are understood in their broad definition: including non-financial forms of participation that involve managing infrastructure services. However, to differentiate participation from traditional public procurement, participation is defined as involving some transfer of risk to the private partner. Allocating risk across partners is a key element of success that should be driven by an assessment of the party best able to manage it, i.e. the party best able to influence the probability of occurrence or of dealing with its consequences[9]. A wide range of risk sharing arrangements is available to policy makers, from the public sector assuming most of the risk to full risk

[9] See OECD (2008). Public-Private partnerships: in pursuit of risk-sharing and value for money.

transfer to the private sector. Table 3 provides a typology of the main categories of contractual arrangements and their consequences for risk-sharing between the public sector (G) and the private actor (P).

Table 1.3. Typology of contractual arrangements

	Service contract	Management contract	Affermage / Lease	Concession	BOT	Joint venture	Divestiture
Asset ownership	G	G	G	G	P/G	G/P	P
Capital investment	G	G	G	P	P	G/P	P
Commercial risk	G	G	Shared	P	P	G/P	P
Operations / Maintenance	G/P	P	P	P	P	G/P	P
Contract duration	1-2 yrs	3-5 yrs	8-15 yrs	25-30 yrs	20-30 yrs	Infinite	Infinite
Retribution of operator	Municipality	Municipality: fee is fixed or based on performance.	Operator collects user fees. *Lease*: fee paid by municipality *Affermage*: revenue shared	Users	Municipality	Users	Users
Occurrence 1991-2007 (World Bank PPI Database)	Not part of scope	Together: 135 of 608 projects		236 of 608 projects	209 of 608 projects	Not a separate category	28 of 608 projects
Examples	Mexico city Chennai	Johannesburg Amman	Cartagena Côte d'Ivoire Senegal	Gabon Jakarta Manilla	China India Malaysia Mexico Morocco	Cartagena Netherlands Chongqing Sino French Water Supply	England Chile

Source: OECD Investment Division, based on Budds and McGranahan (2003), World Bank/PPIAF and local sources.

Box 1.1. Definition of the different contractual arrangements

Under a **subcontracting arrangement – typically a service contract -**, the private party performs specific, time-bound tasks, such as supplying inputs, taking care of planning studies, computing and payroll services or public relations, construction, maintaining assets, installing meters or billing customers, usually in exchange for a fixed fee. In this situation, the private sector bears very little risk and there is very little uncertainty around the expected outputs. In recent years, more and more activities have been outsourced that way to the private sector, including the task of reducing non-revenue water[10].

Under a **management contract**, a private firm is appointed by the government to provide managerial services, often for a fixed fee. The contract typically requires the private party to manage a utility and provide services to the public for a given period of time. The remuneration of the private operator may be fixed at the outset, in which case the commercial risks of the operation are borne entirely by the public sector, or it may be linked to the performance

[10] Kingdom, Liemberger and Marin (2006). The challenge of reducing non-revenue water in developing countries.

of the utility, in which case the private operator bears some commercial risk. More and more countries resort to this type of contractual arrangement to facilitate transfer of know-how and to develop greater understanding of private sector participation as part of a stepped approach.

A **lease** is a written agreement under which a property owner allows a tenant to use the property for a specified period of time and a specified rent. The private-sector operator is responsible for providing the service at its own risk, including operating and maintaining the infrastructure for a given period of time. The operator is not responsible, however, for financing investment such as the replacement of major assets or expansion of the network. If payments from users cover more than the operator's remuneration, the operator is generally supposed to return the difference to the public authorities in order to cover the cost of the investments under the latter's responsibility. **Affermage** only differs from a lease in terms of revenue for the private sector. In both cases, the private operator collects the tariffs and pays, on top of the operation and maintenance costs, a fee to the public sector. But while this fee is fixed in the first case, it is proportional to the volume of water sold in the second case. An affermage contract is currently underway for the provision of urban water in Senegal. A lease was signed in Yerevan, Armenia, in 2006.

Under a **concession**, the private operator is also responsible for asset replacement and network expansion. The level of risk transferred to private sector is therefore higher and compounded by the nature of retribution of the operator, mainly based on user charges. Concession was the predominant contractual arrangements adopted in Latin America in the 1990's. **BOT (build-operate-transfer) contracts** correspond to Greenfield concessions. These contracts involve take or pay provisions, i.e. revenue guarantees, that subject governments to contingent liabilities. On expiration of a BOT, the assets are returned to the public sector. BOTs for treatment plants constitute the bulk of the new contracts currently developed and are particularly thriving in China. **BOOs (build-own-operate)** are similar to BOTs except that they do not involve transfer of the assets to the public sector after a pre-determined period of time. The private operator thus remains responsible for carrying out all the investment required to meet its service obligations. Under **BOOT (build-own-operate-transfer)** schemes, the private sector obtains the capital needed for construction, builds and operates the infrastructure for an agreed period of time (anywhere between 15 and 30 years) and then transfers ownership back to the relevant government. **BOTT (build-operate-train-transfer)** is another variation of BOT whereby the private operator commits to train the public sector to allow a smoother transfer. It was used in several projects in South Africa. Other permutations of the activities for which the private sector takes responsibilities exist and typically involve design, build, operate, maintain and finance.

In a **joint venture**, a new company is formed that combines private and public sector. This is for instance the case of the Chongqing Sino French Water Supply (the drinking water supplier and network manager in Northern Chongqing, China), formed at 60 per cent by Sino French Water Development (a Suez Environment subsidiary) and at 40 per cent by the Chongqing Water Holding Group (a state-owned enterprise). With a **public limited company**, a commercial company is formed but owned by local, provincial and national government. The Dutch Water Supply Act spread the methodology in the water sector of the Netherlands. In **water cooperatives**, customers are members of board, but they are uncommon in large cities. They constitute a common form of rural water provision in Chile. With **divestiture**, ownership of the existing assets and responsibility for future upkeep and expansion are transferred to the private sector. Very few countries have adopted complete divestiture with the notable exceptions of Chile and the UK.

Source: OECD Investment Division, based on OECD (2004). Privatisation in Sub-Saharan Africa. Where do we stand? and OECD (2008). Public-Private Partnerships: in Pursuit of Risk Sharing and Value-For-Money.

35. These contractual arrangements and the risks they aim to address exist in all infrastructure sectors. However, the water and sanitation sector involves important specific risks, especially for investors, as already stressed by the Camdessus panel[11]:

- Water and sanitation projects are usually capital intensive. They involve high initial investment, long payback periods and low rate of return[12]. The resulting infrastructure is fixed, very specific and cannot be used for other purposes or removed from the country. This profile generates high

[11] Winpenny (2003). Financing Water for All: Report of the World Panel on Financing Water Infrastructure.

[12] Estimated by the African Development Bank (2006) between 5 and 10 percent (compared to 17-25 percent in the power sector and 25-30 percent in telecommunications.

contractual risk especially in a context of poor initial information and a weak regulatory environment.

- The revenues come mainly from user fees or government subsidies in local currency, exposing the investor to high *foreign exchange risk* if funding is in foreign currency, a true constraint for international investors, but also for national operators in a context of poorly developed local financial markets. The foreign exchange risk is compounded by a complex and politically sensitive pricing process.
- Management of the projects is mainly local, exposing the investors to the often weak management and financial capacities of the sub-sovereign entities (*sub-sovereign risk*).
- Finally, as a basic need, water has important social and political repercussions that justify political involvement on the grounds that final users should be protected from possible abuse of a monopolistic position on the part of service providers. This often takes the form of control over the setting of tariffs, with the consequence that these rarely reflect costs and lead to under-investment and deterioration of service quality.

36. Water and sanitation differs from the other infrastructure sectors in that it cumulates all these constraints, combination that in effect amplifies the different risks. Such a project profile, in particular the difficulty to consolidate a stable revenue stream, tends to deter commercial financing. Indeed, the most recent trends show some reluctance on the part of private sector to commit to investment obligations and to rely solely on tariffs for their revenue. Implementation of better designed tariffs structure is necessary[13]. New developments in the area of guarantees and risk mitigation mechanisms can in addition help to enhance the attractiveness of the water sector and make sub-sovereign financing a viable option. Table 1.4 highlights the water related risks and the available risk mitigation instruments.

37. An increasing number of investment disputes are brought before international arbitration. The number of treaty-based investor-State dispute settlement cases increased by 29 in 2006, reaching a total of 259 (among which 161 were filed with ICSID and 65 under arbitration rules of UNCITRAL). Infrastructure sectors make up for 40 per cent of the investor-State dispute settlement cases arising under investment treaties, a quarter of which relates to the water sector. This provides another measure of risks for the parties to an infrastructure project.

Table 1.4. Typology of risks and mitigation mechanisms

Water-related risks	Mitigation mechanisms	Country experiences
Commercial: Tariff affordability and resistance Project cash-flow profile Credit risk Contractual risk Performance risk Demand and markets Inappropriate technology Information gaps Hidden costs Costs of inputs (energy)	Careful project design & review, including careful design of tariffs structure and appropriate due diligence. Partial Credit Guarantee (PCG): covers different events causing non payment, incl. commercial risk. Offered by multilateral – IFC – and some bilateral donors. Traditionally used by governments or public entities, but also recently by sub-national governments, municipalities, private companies. Pooled financing: to allow smaller cities to aggregate financing needs, diversify credit risk and spread transaction costs of bond issuance.	Tariff: see OECD Water Programme. PCG: Johannesburg, Mexico PIDG (private infrastructure development group) related Emerging Africa Infrastructure Fund (long-term financing + provision of guarantees) & GuarantCo (PCG on debt in local currency issued by private infrastructure companies and municipalities from lower income countries). Innovative combination of pooled financing & PCG in Tamil Nadu (India): Municipal Urban development Fund issued bonds with PCG from USAID's Development Credit Authority.

[13] See www.oecd.org/water

Political: Expropriation Political interference New standards and directives Sub-sovereign agencies Local stakeholder actions Devaluation	Bilateral investment treaty, dispute resolution mechanisms embedded in contract (i.e. the Convention on the Settlement of Investment Disputes between States and Nationals of other States - ICSID) Political Risk Insurance (PRI): covers war and civil disturbance, expropriation and confiscation, currency convertibility and transferability (export credit agencies, investment insurers, private political risk insurers and multilaterals - MIGA) Foreign exchange risk usually covered through government exchange rate guarantees, indexation of tariffs or local finance in local currency (joint ventures with local partners, split-currency revenue arrangements: costs in local currency, repatriation of profits in foreign currency). Development of local capital market.	156 States have signed the ICSID convention. However, Bolivia became 1rst country to denounce the convention in May 2007. Long term currency swap contract ADB/Philippines for loans in local currency. IFC & EBRD have created municipal finance units and provide loans and PCG to sub sovereign entities. WB / IFC Municipal Fund. IADB & MIGA provide PRG & PRI for municipal concession projects. Asian Bond Market Initiative: guarantee facility for debt in local currency.
Regulatory, legal and contractual: Weak or arbitrary regulator Weak legal framework Contract enforcement	Partial Risk Guarantee (PRG): covers breach of contract, changes in law, license requirements, obstruction in the process of arbitration and non-payment of termination amount. Offered by multilaterals and some bilateral donors. Output Based Aid (OBA): financing is freed once the output is delivered.	Regional infrastructure guarantee facility for West Africa (WB / MIGA / AFD / BOAD): combines PRG + PRI + guarantees for political risks to promote small and medium infrastructure project. Output Based Aid schemes are being developed in several Eastern African countries. The pilot case was in Kenya.
Reputational: Local sensitivities and needs. Credibility/creditworthiness	Communication, participation in awareness campaigns, improvement of service quality. Rating.	Mexico: most sub-national entities have been rated by rating agencies to build credibility and trust. Connection of local and international credit rating agencies to lower costs of rating.

Source: OECD Investment Division, based on UNEP Finance Initiative, Winpenny (2005) and Matsukawa & Habeck (2007)

Setting the regulatory framework right

Competition

38. Direct competition, potentially a strong driver for efficiency and cost reduction, is limited in the water sector owing to important economies of scale and significant sunk costs. Exceptions can however be found in non-networked segments of provision: tank supply and on-site sewage treatment. Competition for the market, through competitive bidding, can also be undermined by limited number of bidders, opportunistic renegotiations[14] and competitive advantage acquired from inside knowledge of the infrastructure by incumbents. Contrary to other infrastructure sectors – such as energy – unbundling of the water value chain has also proved difficult, partly because of the central role of quality in a sector of vital importance which contributed to maintain an integrated approach.

[14] According to Guasch (2004), in Latin America, renegotiations affected 75% of water contracts (against 10% in electricity), after 1.7 years (compared to 2.3 years in electricity). They were initiated in 66% of cases by the operator, and led to delays (70%) and reduction (62%) of investments, tariff increases (62%) and increase in number of cost components allowing pass-through (59%).

39. Competitive pressures can however be exerted through benchmarking – defined as the process of comparing performance between organisations[15]. Benchmarking is however more effective for comparison across operational efficiency measures, rather than costs, which include some important site-specific components that may be difficult to measure. Governments can also take steps to strengthen competition for the market, especially at times of contracts renegotiation by limiting restrictions on entry – discrimination on size and ownership for instance - ensuring a level playing field for international and domestic companies, state-owned and private businesses, and small / larger scale actors; and by limiting the competitive advantage acquired through inside knowledge through better information flow. Specific issues also arise in frontier areas, where the network is little or not developed and the gap is filled by small-scale providers or community based organisations. There, the issue of integration of the overall system is key (especially where there is overlap between the lease area and the activities of third parties). Governments are tempted to grant monopoly in areas of activity to ensure enough revenue to the operator. However, exclusivity clauses designed to take advantage of economies of scale need to be assessed against the efforts to extend network and effectively connect the unconnected. They may in effect provide a strong monopoly power to the incumbent, while depriving the population leaving in frontier areas of formal alternatives. However, in region where water scarcity is an issue and pollution from untreated water or badly managed extraction can have a long-lasting effect on the overall provision chain, extensive oversight of decentralised activities might be very costly and a restricted number of suppliers more adequate.

Regulation

40. Regulation is a form of government control on particular aspects of economic activity. It is embodied in decrees, regulations, legislation, contract and decisions of regulatory agencies and can be exercised through different regulatory alternatives, such as direct controls (standards and norms, permits…), economic instrument (prices, incentives, taxes) and encouragement of self-regulation (benchmarking and information sharing, public awareness). Regulation is a key issue in monopolistic sectors, where competitive pressures are limited, contracts are incomplete, the partnership is multi-stakeholder (with distinct incentives / requirements across stakeholders) and the relationships are long-term and thereby need to adapt to changes. It is also all the more necessary given the need for a holistic approach to preserve the well-being of users and environmental sustainability, from water extraction to wastewater discharge. Nevertheless, empirical evidence suggests that regulation of private sector activity may be costly[16] and may have unintended consequences on the provision of water and sanitation services (notably for the poor) by limiting technological options or strengthening the monopoly power of the incumbent utility.

Box 1.2. Regulating the partnerships, key concepts and issues

Leaving aside self-regulation, there are mainly four regulatory models: (1) regulation by government, (2) independent regulation where independence has three dimensions: independence of decision-making, of management and of financing (usually referred to as the Anglo-American model), (3) regulation by contract, which specifies the regulatory regimes in legal instruments (usually referred to as the French model), and (4) outsourcing regulatory functions to third parties, which makes use of external contractors to perform activities such as tariff reviews, benchmarking, dispute resolution. These models are not exclusive and often hybrid models are adopted. Even in OECD countries, the empirical evidence suggests the existence of a broad continuum of regulatory models. Transition from one to another is also possible as institutional and human resource capacities are building up. Furthermore, the proper establishment of regulatory functions goes beyond the institutional setting and involves an appropriate role and risk allocation across stakeholders and its clear understanding and adherence by all.

[15] Michael Rouse (2007). Institutional governance and regulation if water services. The essential elements.

[16] Massarutto (2007). Liberalization and private sector involvement in the water industry: a review of the economic literature.

In the area of drinking water and sanitation, the main activities of regulation pertain to regulation of water quality, environmental regulation, economic regulation to oversee monopolistic market, monitoring of the sector and consumer protection. Setting the right incentives for private sector and preventing rent-seeking behaviour are the key elements of economic regulation in a sector where competition is very limited. Regulating prices is mainly guided by tradeoffs among the five following basic goals: (1) rent extraction or setting rates that strike a socially acceptable compromise between the interests of investors and consumers. (2) supply-side efficiency or providing signals and incentives for suppliers and investors to increase efficiency. (3) demand-side efficiency or providing signals and incentives for efficient consumption of regulated utility services. (4) revenue adequacy or allowing regulated firms to earn sufficient revenue to attract needed capital. (5) fairness or ensuring that prices are just and reasonable, and contribute to universal service goals without creating significant distortions.

Two alternative mechanisms for regulating prices exist. In price-cap regulation, the regulator sets maximum prices on the services, often with automatic adjustments to account for changes in costs outside the control of the concessionaire and to account for expected feasible improvements in efficiency within the control of the concessionaire, and a pre-set review date. In rate of return regulation, the regulator assigns a value to certain assets necessary to perform regulated services, sets a rate of return on those assets (often the market-determined rate of return on assets with similar risk characteristics) and sets prices that will allow sufficient revenue to cover both return on capital as well as costs that the regulator allows the concessionaire to pass through. With rate of return regulation, the investors have an incentive to invest as their operating and investment costs are covered. However, unless the regulator has access to a well-developed accounting system to audit the costs, the firm might be led to overestimate the costs to justify higher prices. Consequently, the firm has no incentive to reduce costs and may tend to adopt excessive capital-intensive technology. Price cap regulation is less information intensive since prices and not earnings are controlled; and provides for strong incentives to reduce costs. However, recent empirical evidence has shown that it was more likely to lead to contract renegotiations.

In reality most regulatory mechanisms are hybrid systems between rate of return and price cap regulations in order to balance the incentives for efficiency, investments, rent-extraction and fairness. It is also worth noting that prices are not the only regulatory instruments available to support the efforts of policy makers to balance the different sustainability dimensions. Economic regulation also includes the use of subsidies, supervision of commercial contracts and granting of operating licenses. Specific instruments for environmental regulation include abstraction licenses, pollution control, development of standards (on sewerage discharge, water quality). In the context of the work on pricing policies and issues, the OECD Water Programme[17] precisely aims to identify the trade-offs and complementarities between the multiple policy objectives pursued with water pricing policies and to look beyond pricing at other economic instruments for water resource management and adequate provision of water and sanitation services.

Source: OECD Investment Division, based on Eberhard (2007). *Infrastructure regulation in developing countries. An exploration of hybrid and transitional models*, OECD (2007). *The regulation of public services in OECD countries: an overview of water, waste management and public transport*, Kessides (2004). *Reforming infrastructure. Privatisation, regulation and competition* and OECD (2006). *Concessions*.

41. Although considered for a long time as mainly relevant for delegated management, it is today widely acknowledged that effective regulation is equally critical to enhance transparency, efficiency and equity of publicly managed water services[18]. In the past 15 years, many developing countries have developed separate regulatory systems for their water infrastructure sector. According to *Water at a Glance*, most Latin American countries and 7 over the 13 African countries under review have established regulatory bodies since the 1990's. However, it raises important issues, such as (i) how to increase transparency and accountability of the regulatory authorities and ensure their credibility, especially in a context of recent structural reforms, low institutional capacity and important asymmetry of information; (ii) how to define the space for regulation, its interface with contractual arrangements and policy making in order to adequately manage the flexibility required to sustain long-term commitments in a constantly changing environment; and (iii) how to extend effective oversight and

[17] See www.oecd.org/water

[18] Michael Rouse. Institutional governance and regulation of water services. The essential elements. 2007.

regulatory functions to a fragmented sector, notably how to reach out to the small-scale providers and the big users when national regulatory tools are often ill-suited to decentralised activities.

Box 1.3. Regulation and the small-scale providers

The traditional regulatory tools are ill-suited to reach out to small-scale, often informal, private operators. Nevertheless, while small-scale providers show a very good understanding and flexibility to adapt to low-income customers' circumstances, there is a need to monitor the quality of the water they provide and to oversee their monopolistic behaviour and the consequences of their disparate activities on the environment. Moreover, the issue of how to regulate the interfaces between formal and informal providers in urban/peri-urban frontier areas is especially difficult and deserves attention as shown by the Maputo case. Economic regulation of alternative providers rarely extends beyond abstraction licensing and tanker truck registration. Very often, when regulatory rules exist (such as price limits), they are largely ignored due a lack of enforcement and opacity in the regulatory framework. Setting regulation for alternative providers faces a trade-off between the adoption of rules, their enforceability and the flexibility of the market. For instance the banning of a specific technology may lead to the bankruptcy of small providers and deprive the users of access in a context where the main utility may not be in a position to fill the gap in the short term. In that context, it is imperative to assess the relative costs and benefits of implementing different regulatory measures, including their potential adverse impact and the mitigation/compensation strategies available. Monitoring the activities and results may allow a better understanding of the dynamics at work and provide more a solid ground to redefine policies. Involving the customers through complaints handling mechanisms can also be a source of information and a powerful safeguard. Most importantly, formalizing the market requires offering in exchange some form of legal recognition and protection for small-scale private operators that could for instance improve their access to finance and provide an incentive to go formal. This can be difficult when the private actors operate illegally in the lease area of the main utility and/or they face the risk of expropriation because the property rights are not well established.

Source: OECD Investment Division, based on Building Partnerships for Development and Franceys (2006). *Regulating Public and Private Partnerships for the Poor*.

The elements of the multi-stakeholder partnership

42. Contractual arrangements with the private sector are typically long-term and as such not likely to cover all aspects of the complex relationship between the private sector and the public sector. Moreover, developing countries are particularly prone to shocks – such as currency devaluation – that are difficult to foresee in the contract. Many of past difficulties have also arisen from dispute over the real state of water systems and the quality of baseline data. In such context, no contract can be comprehensive enough to eradicate all elements of uncertainty. However, mechanisms exist that may help reduce this uncertainty or deal with its consequences. They include updating the baseline data used to develop the business plan before the contract starts, adopting performance-based contractual arrangements with performance targets defined in terms of improvement rates rather than absolute level and providing for clauses and mechanisms to frame the discussions on future issues as well as formal dispute resolution mechanisms. The legal and institutional framework should facilitate the enforcement of contract and facilitate the partnership. In any case, good faith and willingness of the parties to cooperate and find solutions will remain crucial. In that context, starting the discussion early when challenges arise and before conflicts escalate may help. A stepped approach to private sector participation as adopted for instance by Chile and Armenia might help build understanding among the partners.

43. Partnerships involving the private sector for the provision of public services are not merely a face to face between the public and the private sector, but involve the consumers and the communities, different layers of government and public agencies and diverse private actors. It is compounded in the case of water by the local nature of the service and institutional fragmentation. In many cases, the search for more efficient, accountable and flexible provision of public services has been a driving force behind a greater devolution of powers to local entities. In effect, oversight responsibilities for water resource

management and service provision are split horizontally between different Ministries, and vertically between national, regional and local authorities. While institutional arrangements vary greatly across countries, common understanding of the respective roles and responsibilities, including across different levels of government, as well as of the nature of the partnership, is a precondition for a respectful cooperation. It involves clear definition of objectives, of the means and resources to achieve the objectives and of the compliance mechanisms. Table 1.5 offers a first rough delineation of roles across partners (public sector, private sector, users and donors) as identified in the *Checklist for Public Action*. Effective implementation of policies at local level also calls for assignment of responsibilities that is commensurate with human and financial capacities and strengthening of coordination mechanisms across government levels – through consultative fora, inter-ministerial committees – to ensure policy coherence.

44. In such multi-stakeholders partnerships, transparency and accountability constitute critical elements. They involve information sharing between the private and the public sectors, but also inclusive dialogue for better consideration of population and community expectations. Strengthening an informed involvement of civil society (users, communities and NGOs) may facilitate the task of regulation and strengthen accountability mechanisms by allowing better information flows and greater adequacy of services to needs (through the use of citizen report cards for instance). Engaging consumers remains however a challenge in many countries. Effective engagement requires that the consumers are able to make an informed opinion – implying availability of information and capacity to treat that information -, that they have a voice and the capacity to influence decision making. Different levels of engagement exist[19], from a low level of citizen's influence on policy making through information to consultation and active participation. Strengthening government-citizen relations requires embedding it in a framework that provides for the setting in which the relations evolve – legal rights, institutions and their responsibilities, evaluation mechanisms and capacities.

[19] OECD (2001) Handbook on information, consultation and public participation in policy-making.

Table 1.5. Key roles and responsibilities, as derived from the *Checklist for Public Action*

Government – all levels - and regulatory bodies	Private sector	Users / NGOs / Community groups	Donors / IFIs
Framework conditions			
Establish the enabling environment: the institutional, regulatory and legal frameworks (incl. favourable financial conditions). Build, with the involvement of users, the general consensus on the definition of the desired service provision (level, location, development). Responsible for overall policy and objectives setting, incl. consistency across main programmes, cross-border agreements. Review and adapt policy instruments and objectives as conditions change. Implement and enforce policy framework.	Comply with service quality standards, environmental standards and agreed tariffs. Respect and support local efforts to develop adequate regulation.	Advocate for weaker communities Represent users in regulatory decisions, in stakeholders' dialogue	Contribute to coordination of efforts Promote adoption of internationally agreed standards (such as anti-corruption conventions, ISO norms and ILO principles).
Operations			
Contract design and bidding process, in accordance with overall institutional and regulatory settings. Respect contractual arrangements with private sector. Accountability to users. Manage local water resources. Regulation of water quality, environmental regulation, economic regulation to oversee monopolistic market. Consumer protection, representation and involvement in regulatory decision making (through water customer committees for instance).	Based on contractual arrangements: - Service delivery and operation, - Technical planning, - Customer relations (incl. complaints analysis), - Revenue collection, - Maintenance, - Infrastructure development, - Market analysis: site assessment, customer survey, mapping of the poor.	Build bridges between formal and informal providers, users and other stakeholders	

Government – all levels - and regulatory bodies	Private sector	Users / NGOs / Community groups	Donors / IFIs
Capacity Development			
Political will and commitment: fight against corruption, objectives in terms of universal service and services to the poor, commitment to financial sustainability of the sector. If a decentralization process is underway: allocate roles across public agencies, devolve responsibilities, build capacities in line with responsibilities, and establish coordination mechanisms. Create capacity and space for dialogue between the different stakeholders. It includes involving communities in discussions on service level, technology choice, prices. Help develop consumer trust and knowledge through awareness / information campaigns).	Population awareness raising through targeted communication, participation in local action. Proposition of pro-poor technologies.	Support development and capacity building of user associations (eventually together with national and local government programmes) Raise awareness on hygiene, water conservation, pollution	Support capacity building (of users, government, practitioners), incl. support for project design (through project preparation grant facilities), to develop better understanding of the key elements of a PPP, to support informed involvement of civil society, to support regulators and governments in tariff setting and adjustments, to facilitate access to funding.
Monitoring			
Support and contribute to collect and monitoring of information on the sector. Supervision and enforcement of contractual arrangements. Control of compliance with standards, approval of tariff levels and their periodic & extraordinary revisions, collection and provision of information on quality of services (to promote benchmarking). Develop outreach to small-scale informal providers. First conflict mediation instance.	Reporting of economic, environmental and social performance. Impact evaluation on environment and development of environment friendly technologies.	Participate to monitoring of quality of services and contribute to accountability of officials and providers	Collect and share experience across countries.
Financing			
Organise, plan, cost, formulate tariff policy and funding. If necessary, subsidies should be allocated in a stable, transparent and targeted way. Contribute to funding.	Financing obligations as defined by contract Support sustainability of the sector through efficient management. Role of private financiers	Users should pay for services received	Contribute to funding, incl. through risk mitigation schemes that leverage additional funds.

CHAPTER II. CHECKLIST FOR PUBLIC ACTION

Deciding on public or private provision of infrastructure services

Principle 1. Informed and calculated choice. The choice by public authorities between public and private provision should be based on cost-benefit analysis taking into account all alternative modes of delivery, the full system of infrastructure provision, and the projected financial and non-financial costs and benefits over the project lifecycle.

Specificities of the sector	Issues for governments
Basic human need and economic good. Major resource and input for business. Important externalities on health, education, environment, gender balance. Important data and information deficits. Combination of some large and small-scale projects. Necessity of a global view considering all segments of water provision (integrated water resource management). Wide disparities in initial conditions across countries / regions. In most developing countries, private small-scale providers already cater for large portion of population (the poor and the scattered), often on an informal basis.	This choice is a means to an end: improving consumer access. It should follow an initial consensus on the definition of service provision (level, location, development) desired by society and an assessment of where private sector can add value and of the nature of the participation (financing, service management). Governments remain in charge of the basic regulatory and oversight functions and of the ultimate responsibility to meet population's basic needs. Sustainability analysis should address health, environment, economy, socio-culture and technical issues (incl. the choice of technology and the assessment of the current state of infrastructure). It should consider full water cycle, including treatment, distribution, collection, transport and end-management of wastes, water allocation across different uses and technical options (centralized vs. decentralized systems, water conservation vs. development of infrastructure). Tools, such as the public sector comparator, that provide a quantitative appraisal can be useful when used in conjunction with qualitative analysis and baseline information is clearly disclosed, to better define the costs and benefits associated with private sector participation and forge a consensus among the stakeholders on the key elements required for an affordable and beneficial partnership. Negotiations over the modalities to involve the private sector generate substantial costs (including time and capacity development). A thorough analysis by project might not be feasible because of transaction costs associated with relatively small projects. Abbreviated or group appraisal and standardisation of contracts might help alleviate costs. Early identification of the consequences of choice (notably for different users) facilitates balancing the different interests.

Tools and practices:

- PPP for Water Supply and Sanitation, Swiss Cooperation and BPD: www.partnershipsforwater.net
- Approaches to Private Participation in Water Services: A Toolkit, PPIAF 2006: rru.worldbank.org/Toolkits/WaterSanitation
- Toolkit for pro-poor Municipal PPPs, UNDP: www.margraf-publishers.com/UNDP/PPPUE
- Public Sector Comparator (in Partnerships Victoria Guidelines): www.partnerships.vic.gov.au

Principle 2. Financial sustainability of infrastructure projects. No infrastructure project, regardless of the degree of private involvement, should be embarked upon without assessing the degree to which its costs can be recovered from end-users and, in case of shortfalls, what other sources of finance can be mobilised.

Specificities of the sector	Issues for governments
Long-term, irreversible investment. Lack of transparency and complexity due to provision of subsidies and cross-subsidies, numerous layers of stakeholders and information asymmetry. Complexity of pricing policy with potentially conflicting objectives: cost recovery, economic efficiency, equity and affordability. Reconciliation between affordability, willingness to pay and universal service obligation is difficult in a context where real value of water is not reflected in prices. Sustainability is even more crucial for sanitation: piped sewerage is costly and its benefits less perceived by individuals.	Consider an iterative assessment of service levels, technical options and expenditures on one side and future demand, tariffs and affordability / willingness to pay on the other (at least for projects above a critical size). Price setting should allow achieving "sustainable" cost recovery. The rules should be clear and predictable. Set optimal mix between price cap and rate of return regulation to provide incentives to improve efficiency, to invest and to balance needs of users. Favour water conservation. Consider also the alternative tools available to achieve the objectives of equity and water conservation. Tackle in parallel prices for wastewater treatment and raw water abstraction. Where low affordability and large infrastructure needs, subsidies remain necessary, especially in rural areas and for sanitation. Clarify subsidy levels, time span, nature (connection / consumption) and the targeting process (depending on local settings, consider appropriate mix of precise targeting through household surveys, geographic targeting, self-selection and subsidies to technologies used by poor). The setting of cross-subsidies should allow for changes in the user base. Consider regulating small-scale operator prices through communication on bulk water prices. The choice of technology should match technical considerations and affordability. There is a wide range of choices, especially for sanitation: different levels of on site, conventional and simplified sewerage. Diversification of service provision can help ensure financial sustainability while serving pro-poor objective. Allow for easy upgrading of facilities so that users can climb up the technology scale.

Tools and practices:

- Chile: subsidies based on water stamps (www.gpoba.org/docs/07ch2.pdf)
- Adaptation of technology in Brazil and Bolivia (see Trémolet (2006): http://siteresources.worldbank.org/INTWSS/Resources/WN11.pdf).
- OECD FEASIBLE model: www.oecd.org/document/56/0,3343,fr_2649_34335_33719928_1_1_1_1,00.html
- Pricing component of the OECD water Project: www.oecd.org/water
- DANCEE toolkit for assessing willingness to pay, affordability and political acceptability: www.miljoestyrelsen.dk/udgiv/publications/2002/87-7972-228-8/pdf/87-7972-217-2.pdf

Principle 3. Apply tailor-made model of private sector involvement. The allocation of risk between private parties and the public sector will be largely determined by the chosen model of private sector involvement, including the allocation of responsibilities. The selection of a particular model and an associated allocation of risk should be based upon an assessment of the public interest.

Specificities of the sector	Issues for governments
High risk sector (cumulates commercial, political, contractual, legal, regulatory and reputational risks). Inadequate risk sharing arrangements are at the heart of past disputes. Very heterogeneous private sector, with different comparative advantages and capacities to bear risks. Wide disparities in initial conditions across countries and regions that generate different needs and risk allocation structure. Public interest has various aspects: access (including for disadvantaged groups), environmental sustainability, health and safety, community choice and organisation. The various aspects may not be easy to reconcile (consumer interest may vary widely across connected and unconnected).	The menu of contracts is extending and allowing for diverse risk sharing across parties: smaller projects, reduced risk transfer (lease, management), Greenfield contracts for bulk facilities, joint ventures. The structure of incentives changes accordingly: trade-offs length of contracts / efficiency gains, retribution of contractor / network extension. Risk allocation should be driven by an assessment of the party best able to manage it so as to ensure value for money and sustainability of partnerships. Success of a model can only be assessed in the long run when sustainability and adaptation to changes can be proved. Bidding process cannot achieve alone the relevant risk allocation, which is shaped by the dynamics of relationship. Build on the strengths of respective private actors. Tap on small-scale providers' capacity to reach out to poor customers in smaller cities, peri-urban and remote areas. Examine how joint ventures between international companies and local actors can help alleviate the foreign exchange risk and support technology transfer. Consider a step approach: strengthen commercial functions and information system through service or management contracts first and develop greater understanding between the private and public sector for a more motivated choice. Such approach can facilitate transfer of know-how, help develop a better understanding of the state of water systems and help strengthen public sector performance. Consider carefully the roles for different levels of government and the coordination mechanisms across different actors.

Tools and practices:

- Blending of private sector and public money (Colombia, Malaysia, Peru).
- Affermage in Senegal (risk allocation and incentive setting): www.afd.fr/jahia/Jahia/lang/en/home/publications/documentsdetravail/pid/1378
- Alternative business models based on the corporate social activities of big users and property developers (OECD water Project: www.oecd.org/water)
- Involving the small-scale: Mauritania delegated management model in small towns, contracts between public utility and small-scale providers in Ho Chi Minh City (see Building Partnerships for Development: www.bpd-waterandsanitation.org).
- Partnership communities and private sector: the Agua Para Todos Partnership (Bolivia): www.bpdws.org/web/w/www_134_en.aspx
- Step approach: EMOS (Chile) contracted out several activities before divestiture, the management contract followed by a lease for the Yerevan water utility in Armenia (www.oecd.org/dataoecd/25/22/40572658.pdf).

Principle 4. Preserve fiscal discipline and transparency. Fiscal discipline and transparency must be safeguarded, and the potential public finance implications of sharing responsibilities for infrastructure with the private sector fully understood.

Specificities of the sector	Issues for governments
Payments of fees, subsidies and guarantees that constitute long-term expenditures and contingent liabilities on budget.	Determine what bears on budget (subsidies, extension of network, guarantees, oversight and coordination) and transaction costs. Consider adopting clear rules on disclosure of guarantees (monitoring of the diverse guarantees provided through a register of guarantees, integration of estimated cost in annual budget).
Owing to the essential nature of water, government is expected to act as the provider of last resort if provider fails to deliver.	Be aware of the trade-off between guarantees to attract private sector and resulting contingent liabilities bearing on fiscal accounts. For the sake of fiscal transparency and sustainability, disclose future costs of private sector participation and incorporate them in medium-term budgetary projections and debt sustainability analysis.
Local management involves sub-national entities (municipalities, utilities).	Clarify the fiscal relationships of governments with sub-national entities. Clarify the legal basis for sub-sovereign financing.
High transaction costs (numerous transactions, actors and models).	Encourage building of capacity, transparency and accountability of sub-national entities, using incentive mechanisms (linking central transfers to quality of reporting for instance) and information sharing (publication of financial and management information). Encourage monitoring by civil society. Third party oversight, e.g. by parliamentary bodies may help safeguard the integrity of the process.

Tools and practices:

- Output Based Aid can help clarifying subsidies and developing connections: www.gpoba.org
- Credit rating of Mexico city: development of a municipal bond market without the backup of sovereign guarantees.
- IMF recommendations: Government Guarantees and fiscal risk, IMF, 2005: www.imf.org/external/np/pp/eng/2005/040105c.pdf
- OECD Best Practices for Budget Transparency: www.oecd.org/gov/budget
- Recommandations by the Camdessus Panel (2003) the Gurria Task Force (2006) on financing water for all: www.financingwaterforall.org

Enhancing the enabling institutional environment

Principle 5. Enabling environment. A sound and enabling environment for infrastructure investment, which implies high standards of public and corporate governance, transparency and the rule of law, including protection of property and contractual rights, is essential to attract the participation of the private sector.

Key water and sanitation specificities	Issues for governments
The water and sanitation sector presents high contractual, foreign-exchange and sub-sovereign risks. It generates important political interest and substantial involvement from the international community (international financial institutions and donors). The quality of water and sanitation governance does not relate only to purely sectoral issues, but also to land tenure, housing security, decentralisation policy, environmental rights. Planning and implementation horizons for water and sanitation require long-term consistent policies that extend beyond political horizons and may be made difficult by political instability. The impediments arising from business environment differ across private actors. Small-scale business is particularly affected by a burdensome business environment, poor infrastructure and underdeveloped financial systems. The poor bear disproportionally the consequences of poor business environment (in their activity and in their access to basic services).	Public sector remains the enabler: the quality of the business climate and of corporate governance depends on a wide range of legislation, administrative and policy practices and on coherence across the different policy vectors as raised by the OECD *Policy Framework for Investment*. Clarify and separate between different state roles: political function, administration and operation of service delivery. With water and sanitation being largely local issues, be mindful of consistency across central and municipal government and of institutional continuity. All tiers of government and public agencies should respect their commitments (i.e. timely payments of water bills and subsidies). Better integration of small-scale private actors in the chain of service provision may require some form of official recognition of the legitimacy of their activities. Consider building on the burgeoning oversight and regulation by local communities to frame their activities.

Tools and practices:

- Water Dialogues are developing in South Africa, Uganda, Brazil, Philippines to identify the key bottlenecks: www.waterdialogues.org
- Maputo and Bamako licensing of operators by communities (see Building Partnerships for Development: www.bpd-waterandsanitation.org).
- Reform of general concession law in Russia: www.oecd.org/daf/investment/russia
- UNCITRAL Legislative guide: www.uncitral.org/uncitral/en/uncitral_texts/procurement_infrastructure/2001Guide_PFIP.html
- OECD Policy Framework for Investment: www.oecd.org/daf/investment/pfi
- OECD Principles of Corporate Governance: www.oecd.org/daf/corporate/principles
- OECD Guidelines on Corporate Governance of State-owned Enterprises: www.oecd.org/daf/corporateaffairs/soe
- OECD Principles of Regulatory Reform: www.oecd.org/document/27/0,3343,en_2649_33735_2753254_1_1_1_1,00.html

Principle 6. Fight against corruption. Infrastructure projects should be free from corruption at all levels and in all project phases. Public authorities should take effective measures to ensure public and private sector integrity and accountability and establish appropriate procedures to deter, detect and sanction corruption.

Specificities of the sector	Issues for governments
Large financial flows at stake in large scale construction. Numerous transactions and stakeholders in service provision. Complexity of organisation, including patchwork of public agencies and administrative rules. Important political involvements in projects. Monopolistic sector with little cost-recovery are strong incentives for collusion. Importance of informal sector. Opacity and asymmetry of information. High demand and human need dimension generate high power leverage. Water rationing and interruptions provide important corruption opportunities.	Develop a holistic approach to corruption: supply as well as demand side, small-scale and large, public and private, financiers and providers. Involve the users to report on service quality and behaviours. Consider sending strong political signal: adhere to international anti-corruption conventions (OECD and UN Conventions), induce institutional reforms (procurement, judiciary), set a structure of disincentives and strengthen monitoring and enforcement. Reduce incentives: address corruption explicitly in the PPP framework, define performance targets and outputs, develop reporting and information disclosure (including on cases of corruption), introduce opportunities for challenges and reviews, and allow for private sector to benefit from contract (rather than by perverting it). Reduce incidence of transaction, gain from each transaction and increase probability of detection and penalty. Establish credible threats. Encourage communication on anti-corruption policies throughout levels of government and training programmes to the staff. Be aware and mitigate potential negative impacts of the fight against corruption: the costs related to proliferation of controls and institutions and the impacts on the poorest. Tackle corruption in an open, inclusive and equitable manner by suggesting alternatives so as to avoid negative consequences of removing illegal connections, closing below standard facilities.

Tools and practices:

- Empowerment of community: Kecamatan Development Project, Indonesia: www.worldbank.org/id/kdp
- Political leadership and transparency programmes in Veracruz, Mexico: www.unglobalcompact.org/docs/issues_doc/7.7/case_stories/BAC_2D.2.pdf
- Development of codes of conduct and staff training by the Public Utility Board in Singapore: www.pub.gov.sg
- OECD Anti-Bribery Convention: www.oecd.org/daf/nocorruption/convention
- United Nations Convention against Corruption: www.unodc.org/unodc/en/corruption/index.html
- Transparency International Global Corruption Report 2008: www.transparency.org/publications/gcr

Principle 7. Create a competitive environment. The benefits of private sector participation in infrastructure are enhanced by efforts to create a competitive environment, including by subjecting activities to appropriate commercial pressures, dismantling unnecessary barriers to entry and implementing and enforcing adequate competition laws.

Specificities of the sector	Issues for governments
Little possibility for direct competition owing to inelastic demand and supply, high fixed costs, high transport costs and economies of scale. Vertical integration justified by internalisation of externalities and cross-subsidisation. Some opportunities for competition for the market (through competitive bidding) and benchmark competition. Little competition in post-contract phase, once the operator is selected and acquires a competitive advantage owing to inside knowledge of the sector. Consequently, opportunities for competition essentially lie at the frontier: for network extension, new household connections in small towns and peri-urban areas. Competition for market can be circumvented through strategic renegotiations and monopolies hidden by complex share-holding arrangements in a concentrated sector.	Show strong political leadership: transparency and early signalling of policy will help level the playing field. Develop technical expertise: careful review of bidding and consideration of history of practices elsewhere. Be aware of the trade-offs in contract award: risk borne by investors vs. probability of renegotiations and length of contract (which provides incentive to invest in maintenance) vs. more frequent competitive tendering. Exclusivity awarded to enable cross-subsidies and attract investors can have counter-productive consequences. Consider opening market and encouraging alternative providers, where network and household connections expansion is slow, to speed up provision to the poor at better price. Ensure that small-scale providers are not excluded from the market while avoiding cartelisation among them. Develop benchmark competition by comparing performance across water providers and releasing the information to the public. Consider streamlining the operational practices and legal form under which the public water providers operate to level the playing field with private competitors and develop benchmarking. Administration and regulation procedures should be consistent across the whole sector (public, private, and informal operation) to encourage fair comparison and competition.

Tools and practices:

- Benchmarking: Competition with the best performing company with associated reward (England, OFWAT: www.ofwat.gov.uk), with a model company (Chile: www.oecd.org/dataoecd/4/58/2083795.pdf & www.siss.cl), within city competition (Manila, Jakarta), performance contract (Senegal: www.afd.fr). Public information systems: across utilities (PERPAMSI, Indonesia: www.perpamsi.org), across municipalities (Kostra, Norway: www.ssb.no/kostra and Canada: www.nationalbenchmarking.ca).
- OECD Global Forum on Competition: www.oecd.org/daf/competition
- OECD Guidelines on Corporate Governance of State-owned Enterprises: www.oecd.org/daf/corporateaffairs/soe

Principle 8. Facilitate access to financial market. Access to capital markets to fund operations is essential to private sector participants. Restrictions in access to local markets and obstacles to international capital movements should, taking into account macroeconomic policy considerations, be phased out.

Specificities of the sector	Issues for governments
Specific needs owing to long-term, stable but low return investments and sub-national management. The water and sanitation sector presents high contractual, foreign-exchange, sub-sovereign and political risks. Uncertainty of revenue streams (unstable tariffs policies and difficult bill collection). Some small-scale projects that may not generate interest from the banking sector owing to high transaction costs and to limited credit worthiness of small-scale operators.	Improve financial status of sub-national entities: support and facilitate the drafting of long-term strategy and the development of stable revenue streams as prerequisites to attract long-term financing. Take stock of the financing tools and guarantee schemes available and used elsewhere. Assess what can be adapted locally, taking into account the costs associated with risk mitigation tools. Facilitate access of local small-scale business to financing: facilitate assistance to overcome the challenge of preparing bankable projects, support linkages with bigger operators and promote a more SME friendly banking and financial system.

Tools and practices:

- Sub-national tools: Guaranteed municipal bonds (Mexico, Johannesburg 2004, India: $2.9bn in 10yrs). Development of credit rating of sub-sovereign entities. Connection of local and international credit rating agencies to lower costs. (Mexico). ADB Sub-sovereign facilities in local currency. PPIAFhttp:// Sub-National Development Technical Assistance Programme (www.ppiaf.org/snta), Cities Alliance Municipal Finance Task Force (www.mftf.org).
- Matching supply and demand for long-term instruments: infrastructure funds based on pension funds (PAIDF South Africa).
- Pooled financing (India: Greater Bangalore Water Supply project, Pooled Fund in Tamil Nadu). (See Catherine James, ICRA www.worldwaterweek.org/stockholmwatersymposium/Abstract_Volume_07/Microsoft%20Word%20-%20Workshop%204.pdf)

- Community participation (India).
- Blending financing sources (Zambia Devolution Trust Fund: public money as leverage).
- Public/Private Developpers: InfraCo (www.infraco.com), IFC Ventures (http://ifcventuresinc.com).
- Revolving mutual funds (US): www.epa.gov
- Recommandations by the Camdessus Panel (2003) the Gurría Task Force (2006) on financing water for all: www.financingwaterforall.org
- OECD Financial Planning Tool for Water Utilities: www.oecd.org/LongAbstract/0,3425,fr_2649_34343_36475550_119699_1_1_1,00.html

Goals, strategies and capacities at all levels

Principle 9. Consultation with stakeholders. Public authorities should ensure adequate consultation with end-users and other stakeholders including prior to the initiation of an infrastructure project.

Specificities of the sector	Issues for governments
Water and sanitation are segmented sectors that involve multiple stakeholders (users, sector employees, different layers of government and public agencies, communities, donors, private sector, NGOs and environmental associations). Water is a human need with important externalities. Its management is highly politicised. The sector may involve the construction of particularly large physical infrastructure, such as dams, with potentially important impact on local communities, but also of facilities that may generate local controversies (treatment plants). Labour intensive sector. Important cross-jurisdictional and cross-country dimension. Important vertical and horizontal coordination dimension across levels of government, especially across local governments.	Facilitate clear understanding of roles and responsibilities of all stakeholders, notably through the creation of capacity and space for dialogue. Develop coordination mechanisms. Consider ways of meaningfully involving weaker communities. Involve the employees and their representatives in project development. Develop consumer trust and awareness through information campaigns on public policies and disclosure on key project information and expected outcomes. Follow internationally agreed recommendations on the minimum set of information for consumers. Communicate on the reasons for unpopular decisions or actions. Public consultation should be developed according to the principles of clear focus, representation and transparency and follow published standard procedures. It requires time and resources and should therefore be organised strategically at important stages of policy making and preferably start at the early stage of the projects. Consultation should involve explicit feedback from the public authority. Consider greater involvement of civil society (NGOs, consumer groups) in protecting consumer rights, monitoring service provision and determining model of utility management. Consider providing adequate training.

Tools and practices:

- Providing space for dialogue: Water dialogues in South Africa, Uganda, Brazil, Philippines: www.waterdialogues.org
- WaterAid / TearFund Advocacy Guide: www.wateraid.org/documents/psp_advocacy_guide_tf_and_wa.pdf
- Consumer consultation: membership in administrative board of water company (Senegal), in regulatory board (Water Watch Group, Zambia), in consumer consultative committee (UK). Establishment of State-Citizen Water Councils in Mexico. See Franceys (2006).
- Aarhus Convention: www.unece.org/env/pp/
- OECD handbook on information, consultation and public participation in policy-making: www.oecd.org/gov
- Releasing key project information: a project summary template Partnerships Victoria Disclosure Policy: www.partnerships.vic.gov.au
- AccountAbility: Partnership Governance and Accountability Framework: www.accountability21.net
- ILO Declaration on Fundamental Principles and Rights at Work: www.ilo.org/declaration
- PPIAF toolkit on labour issues in infrastructure reform: www.ppiaf.org/LaborToolkit/toolkit.html
- Phnom Penn workforce incentive model: www.adb.org/water/actions/CAM/PPWSA.asp

Principle 10. Empower authorities responsible for privately-operated infrastructure projects. Authorities responsible for privately-operated infrastructure projects should have the capacity to manage the commercial processes involved and to partner on an equal basis with their private sector counterparts.

Specificities of the sector	Issues for governments
Decentralised systems (transport costly compared to unit value) and local management. The search for more efficient, accountable and flexible provision of public services has been a driving force behind a greater devolution of powers to local entities. However, the recent decentralisation process has not always been followed by devolution of financial means and building of capacities. Important consequences of the decentralised nature of water management for capacity building, monitoring and performance management. Horizontal cooperation across municipalities to achieve economies of scale and support from central government is crucial. High political interferences in multi-layer system.	When considering sub-national assignment of responsibility, be cautious of potential trade-off between capacities, economies of scale and costs, resource management, coordination on one hand and proximity, community empowerment, accountability, efficiency on the other. Consider careful allocation of roles and responsibilities across different authorities – including to the PPP unit when relevant -, taking into account existing capacity gaps. Allocation of resources should be predictable and commensurate with responsibilities. Encourage training: from central government to sub-national entities, across municipalities (notably through forums, internet platforms, exchange of staff to share practices). Focus training on the key elements of partnership (respective roles and responsibilities of parties throughout the project, tariff setting and adjustments, performance monitoring, handling disputes and informing and communicating with the public). Introduce performance management mechanisms to help building capacities. Be aware that capacity building takes time and commitment. Preserve consistency across government policies: reduction of overlapping responsibilities, strengthening of coordination mechanisms across government levels (through consultative fora, inter-ministerial committees), policy coherence (tax policy should not contradict tariff policy for instance). Monitor and evaluate performance. Developing performance indicators for local governments can facilitate exchange of information and promote good practices.

Tools and practices:

- Decentralisation: Chile (13 regional companies) vs. Colombia (1380 municipal providers). The Water Boards in the Netherlands (see OECD Territorial Review. Competitive cities in the global economy: http://publications.oecd.org/acrobatebook/0407011E.PDF).
- Bolivia 1994 Popular Participation Law (see Asian Development Bank: www.adb.org/participation/toolkit-methods-approaches.asp).
- Reform of the institutional setting in Mauritania (supervising 350 small independent operators and ensuring regulation in small towns).
- Integrated Sanitation budget line in Uganda to empower districts in the area of sanitation.
- Training support structures: South Africa Treasury and PPP unit: www.ppp.gov.za. UK Public Private partnerships Programme of Local Government Association (www.4ps.gov.uk), Partnerships UK: www.partnershipsuk.org.uk, Partnerships Victoria (Australia): www.partnerships.vic.gov.au
- Information sharing and learning: Kostra, Norway (www.ssb.no/kostra).

Principle 11. Clear and broadly understood objectives and strategies. Strategies for private sector participation in infrastructure need to be understood, and objectives shared, throughout all levels of government and in all relevant parts of the public administration.

Specificities of the sector	Issues for governments
Segmented sector: oversight responsibilities for water resource management and service provision are split horizontally between different Ministries, and vertically between national, regional and local authorities. Consequently, responsibility is often diluted and allocation of responsibilities is unclear. Important bearing on social (education, health, gender, settlements) and environmental policies. Water and sanitation governance issues are not purely sectoral, they relate to land tenure, housing security, decentralisation policy, environmental rights. Water governance and reforms involve many objectives that may contradict each other (social equity, economic efficiency, environmental conservation…). Some unavoidable objectives: universal service obligation, resource preservation.	Institutional arrangements vary greatly across countries. In that context, consider strengthening common understanding across levels of government of respective responsibilities for overall policy and objectives setting and for the enforcement of policy framework. It involves clear definition of objectives, of the means and resources to achieve the objectives and of the compliance mechanisms. The objectives in terms of universal service and services to the poor should be clarified, as well as the expectations in terms of network extension, reduction in prices and level of services. Ensure consistency across the main development programs and with general policy. Infrastructure development is closely linked with legalisation of informal settlements. Sanitation in particular has to be addressed as part of an integrated urban programme that tackles housing, tenure and relocation. It can be done through multi-annual planning for water strategies and enhanced inter-ministerial coordination on water issues. Involve different levels of government in structured negotiations over planning process, implementation and monitoring. Channel efforts of the many involved actors towards main development programme (including NGOs, donors, diverse private actors).

Tools and practices:

- Setting of a steering committee across the different ministries in charge of water to ensure coordination (Ethiopia).
- Sector Wide Approach to Planning (Uganda).
- Singapore: on line codes of practice (www.pub.gov.sg)
- OECD *Promoting Pro-Poor Growth: Infrastructure*: www.oecd.org/dac/poverty

Principle 12. Mechanisms for cross-jurisdictional cooperation. Mechanisms for cross-jurisdictional co-operation, including at the regional level, may have to be established.

Specificities of the sector	Issues for governments
Due to the high cost of transporting water (relative to its unit value), large regional networks are not as common as in the electricity sector. Water systems tend to be decentralized and operated under local jurisdiction. However, importance of cross-border management of water issues owing to scarcity of resource, uneven distribution, and the widespread consequences of mismanagement of resource (such as pollution for instance). Spatial and functional organisation of river basins and watersheds do not necessarily correspond to administrative boundaries. Mechanisms to enforce poverty reduction across municipalities (cross-subsidisation).	Adopt and implement the principles of Integrated Water Resource Management (IWRM). Enhance inter-municipal cooperation and develop specific incentives. Consider tools for vertical collaboration (between central government and sub-national levels such as municipalities), such as contracts. Develop regional cooperation. Consider trans-border agreements. Envisage dispute settlement mechanisms to frame resolution of conflicts that cross-jurisdictional cooperation may trigger.

Tools and practices:

- On IWRM, see Global Water Partnership: www.gwpforum.org
- OECD country experience of inter-municipal cooperation, contract as a tool for vertical collaboration and cross-border regional governance: OECD Territorial Review 2006 (http://publications.oecd.org/acrobatebook/0406041E.PDF)
- Setting up of institutions to manage jointly water resources (Nile Basin Initiative: www.nilebasin.org).

Making the public-private co-operation work

Principle 13. Establish communication and consultation with private sector. To optimise the involvement of the private sector, public authorities should communicate clearly the objectives of their infrastructure policies and they should put in place mechanisms for consultations between the public and private partners regarding these objectives as well as individual projects.

Specificities of the sector	Issues for governments
No complete contract: long-term arrangements, shock-prone environment (currency devaluation), uncertainty on the real state of water systems and the quality of baseline data. Multi-stakeholder dialogue: multi-layer public sector, multiplicity of private actors, key role of users and communities. Sensitive issues: important social, political and environmental repercussions.	Consider including in contract clauses and mechanisms to frame the discussions on future issues (including on dealing with the consequences of inadequate information) as well as formal dispute resolution mechanisms. Starting the discussion early when challenges arise and before conflicts escalate helps. Consider developing one-stop shops for private actors to ensure coordinated public sector communication. It may involve the development of dedicated website to inform the private sector and perform basic tasks (licensing for instance). Create capacity and space for dialogue between the public and private sector, but also across private providers. The communication channels may differ across actors, depending on the existence of business association for instance and whether the sector is informal. Determine which actors are legitimate interlocutors. Promote association of independent providers, remaining careful of preventing cartelisation. Engage the private actors to formulate their requirements and constraints for mutual understanding and better appropriateness of contracts. Need to differentiate between contractual relations and non-contractual relations. The basis for relations is the formalised contractual arrangement. The societal non-contractual relations are important elements of the communication between the public and private actors but need formalization if they predominate.

Tools and practices:

- Municipal sanitation platform in Durban coordinating private activities. See BPD: www.bpd-waterandsanitation.org/web/w/www_37_en.aspx
- APWO of Uganda: Association of small private providers that aims to coordinate action and generate a common voice: www.oecd.org/dataoecd/50/25/37787617.ppt
- Global Water Operators Partnerships Alliance: www.unhabitat.org

Principle 14. Full disclosure of project related information. There should be full disclosure of all project-relevant information between public authorities and their private partners, including the state of pre-existing infrastructure, performance standards and penalties in the case of non-compliance. The principle of due diligence must be upheld.

Specificities of the sector	Issues for governments
Water and sanitation facilities are mainly underground and difficult to appraise. In the past, underestimated state of disarray of infrastructure has led to many controversies. The flow of information is made difficult by multi-jurisdictions dimension. Asymmetry of information and limited reversibility in the short run. Disclosure of information is key in the sector because of a high incidence of corruption, to facilitate a better understanding of all parts and make public policy clear in a sensitive area.	Invest time and capacity in the due diligence process. When information gaps have been identified, concentrate on improving data quality overtime. Involve all stakeholders in data improvement strategy. Provided the uncertainty on the state of infrastructure, consider updating the baseline data used to develop the business plan before the contract starts. Adopting performance-based contractual arrangements with performance targets defined in terms of improvement rates rather than absolute level can help reduce data requirement. Consider focusing the monitoring on a limited set of key indicators (for which there is agreement on computing methodology). Clarify expectations and constraints.

Tools and practices:

- IWA set of monitoring indicators - IBNet: www.ib-net.org

Principle 15. Fair, non-discriminatory and transparent awarding of contracts. The awarding of infrastructure contracts or concessions should be designed to guarantee procedural fairness, non-discrimination and transparency.

Specificities of the sector	Issues for governments
The consequences of rigged contract awarding may be important (higher prices and lower investment levels) and may fall disproportionally on the poor. Concentrated sector where civil society is active. Contract design and bidding process are key elements of success of the project. Importance of the credibility of the deal, the authorities and the reputation of the private actor. The sector involves long-term relationships that need to be grounded in sound contractual arrangements.	In the contract award process: Clarity and transparency of rules of game for all stakeholders, including clearly communicated evaluation criteria. Maximise the opportunity for competition. Minimize opportunities for collusion and for future renegotiations by carefully selecting the characteristics of process (number of operators and their coordination) and the award criteria. Favour simple award criteria to help readability of bids and focus on quantity, quality and prices of services to be provided. Bid evaluation is a critical element to assess financial and technical capacity of parties to deliver the project. Past track record can be an indication of performance but should not be too narrowly defined as to exclude smaller firms or limit excessively competition. Consider writing an evaluation report describing the financial propositions of bidders, service delivery propositions, construction proposals, potential risks to government, technical and financial capacities of parties, flexibility of proposal to accommodate changes. In the design of contract: Be aware of the trade-off between a complete contract and its flexibility. In setting the deal characteristics, be aware of the consequences on incentives for private sector: duration (trade-off private sector commitment vs. competition and risk borne by the private actor / by government), investment vs. performance obligations, allocation of risks, cost of capital determination, valuation of concession assets, pro-poor objectives. Provide for regulatory elements (price cap vs. rate of return, guidelines for adjustment in tariffs, social tariffs) and dispute settlement principles (performance bond, contingencies for renegotiation, recourse to international arbitration, permanent review panels and permanent dispute panels) in the contract.

Tools and practices:

- Kessides (2004) for a discussion of different types of regulation and their respective merits: http://go.worldbank.org/IG9W1RPX70
- OECD (2006). Concessions: www.oecd.org/dataoecd/36/6/35967639.pdf
- Partnerships Victoria: www.partnerships.vic.gov.au

Principle 16. Output/performance based contracts. The formal agreement between authorities and private sector participants should be specified in terms of verifiable infrastructure services to be provided to the public on the basis of output or performance based specifications. It should contain provision regarding responsibilities and risk allocation in the case of unforeseen events.

Specificities of the sector	Issues for governments
Infrastructure gaps remain substantial and level of access low in most developing countries. High level of public money allocated to infrastructure development and subsidies. Focus on output (such as people provided with access) rather than inputs would allow to dispassionate the debate.	The contract should define precisely the scope of the project (objectives to be achieved, rights, obligations and responsibilities of all parties), set non-contradictory targets and avoid over-regulation (combination of performance targets and investment obligation for instance). Deadlines should be set realistically as the results might not materialise in the very short-term. The contract should specify the framework for negotiations; include clauses and mechanisms to frame discussions on future issues and formal dispute resolution procedures. Regulate and monitor outputs rather than inputs. Avoid strict technical service specifications as it restricts options and might disadvantage the poor. Relaxing some technical standards (i.e. pipe diameters, gradient and depth) can allow the development of cheaper, pro-poor systems. Develop monitoring processes and promote reporting of economic, environmental, and social performance. Improve data availability and quality over time. Identify and focus on a small number of key indicators (clear, easy to measure) to lower the cost of information provision. These will typically include indicators of progress in outcomes, of service quality, of efficiency and of financial performance. Targets can be specified in terms of tangible improvements if uncertainty exists over actual levels. Definition and methodology to compute the indicators should be agreed between the parties. Assessment and monitoring of performance can build on feedback from civil society.

Tools and practices:

- Output Based Aid schemes in Kenya: www.wsp.org/UserFiles/file/67200752513_MicrofinancePolicyNoteAf.pdf
- Performance targets embedded in contract (in terms of leakage reduction, improvement in bill collection) in Senegal: www.afd.fr
- Simplified sewerage in Latin America: www.irc.nl/page/8193
- Global Reporting Initiative: www.globalreporting.org
- Citizen report cards in Bangalore: www.swedishwaterhouse.se/swh/resources/20051010171233Community_Voice_as_an_Aid_to_Acc_Thampi.pdf
- OECD Guidelines for Performance Based Contracts between Municipalities and Water Utilities: www.oecd.org/env/water/performancebasedcontracts. The use of performance-based contract in Yerevan: www.oecd.org/dataoecd/25/22/40572658.pdf

Principle 17. Competent, well resourced and independent regulatory bodies. Regulation of infrastructure services needs to be entrusted to specialised public authorities that are competent, well-resourced and shielded from undue influence by the parties to infrastructure contracts.

Specificities of the sector	Issues for governments
Monopolistic sector, long-term incomplete contracts and multi-stakeholders dialogue. High occurrence of renegotiations. Necessity of a holistic approach to preserve well-being of users, while safeguarding environment, from water extraction to wastewater discharge. Quality issues very prominent (quality of water, pollution). Complex pricing policy. Key importance of maintenance in a capital intensive sector. Challenges magnified by asymmetry of information, limited credibility of recently established bodies, importance of small-scale informal providers for which national regulatory tools are often ill-suited and diversity of private actors in a decentralised setting.	There should be a clear separation between commercial and regulatory functions of the State. Regulatory bodies should follow principles of good regulation, in particular: clarity, practicality and focus (on water quality, environmental regulation, economic regulation to oversee monopolistic market, monitoring and consumer representation). Establishing the regulatory body prior to reform can support building-up stability and credibility. Resource capacity should be commensurate with mandate. Roles and responsibilities may evolve as capacity and credibility develop. Consider alternatives such as market-based instruments, information approaches, self-regulation, regulation by contract and contracting out of specific functions that may complement actions of regulatory bodies. Efforts must be made to ensure consistency with other regulations and policies. Predictability, transparency, consistency and clarity of rules foster both independence and accountability of regulatory bodies. It involves: adopting clear rules for decision making (i.e. on tariffs setting and review), disclosing information on decisions and procedures, specifying recourse mechanisms, submitting to judicial reviews and introducing review clauses. Effective enforcement involves credible and applicable sanction mechanism. Reporting obligation towards a publicly elected parliament may strengthen accountability. Regulatory impact analysis can help assess the likely benefits, costs and effects of regulations. Decentralisation may improve responsiveness to local necessities but may generate coordination problems. Similarly, a multi-sector agency can help share fixed costs, limited capacities; build expertise in cross-cutting issues; and better resist capture by specific interests but may lose specific sector capacity. The decision will depend on country capacities and size. In any case, consider strengthening co-ordination among regulatory authorities and levels of government and reducing overlapping of responsibilities. Acknowledge diversity of private actors and identify the challenges they raise for regulation. A comprehensive regulation may be costly and have adverse impact on small-scale and decentralised activities. Administrative simplification involves reducing layers of regulation and better information on regulatory principles and lines of responsibility. A number of tools exist depending on contexts: one-stop shops, on-line licensing and business services. Regulation and oversight of decentralised systems might be best provided by local communities and governments. Engagement strategies include licensing, municipal delegated management models and partnerships with utilities. Some light price regulation is possible through sharing information on bulk water price of utilities.

Tools and practices:

- The Guaranteed Standards Scheme (OFWAT – UK: www.ofwat.gov.uk).
- Smart Regulation: training, public consultation, monitoring and review in Canada (www.regulation.gc.ca)
- On-line business services: Canada (www.bizpal.ca), UK (www.businesslink.gov.uk)
- Regulation of small-scale providers: Incentive package developed by NWASCO (Zambia). Regulation of prices and MOU with tanker operator association by PURC (Ghana).
- Regulatory impact analysis (Ireland): www.betterregulation.ie
- Regional regulatory initiatives to help capacity building, sharing of information, harmonisation through development of guidelines and sharing of good practices: South Asian Forum for Infrastructure Regulation (http://safirasia.org), African Forum for Utility Regulators (www.afurnet.org).
- OECD Key issues and recommendations on consumer protection: www.oecd.org/document/2/0,3343,fr_2649_34343_2391682_1_1_1_1,00.html
- OECD Guiding Principles for Regulatory Quality and Performance: www.oecd.org/dataoecd/19/51/37318586.pdf
- OECD Guidelines on Corporate Governance of State-owned Enterprises: www.oecd.org/daf/corporateaffairs/soe
- World Bank Handbook for evaluating infrastructure regulatory systems: http://rru.worldbank.org/Toolkits/InfrastructureRegulation

Principle 18. Allowing for good faith, transparent and non-discriminatory renegotiations. Occasional renegotiations are inevitable in long-term partnerships, but they should be conducted in good faith, in a transparent and non-discriminatory manner.

Specificities of the sector	Issues for governments
Long-term, complex contracts that cannot be complete. Limited information on the state of the assets. Occurrence of important external shocks – exchange rate devaluation, increased price of inputs - has put stress on several partnerships in the past. Over the long run, legitimate changes in policies and objectives.	The constantly changing environment that countries face (due to external and internal factors such as population growth, migration to urban areas, evolution of poverty, institutional development), and the long-term commitment to a specific technology that infrastructure projects represent call for building some flexibility to adapt to new conditions into contractual arrangements. Providing for clear rules to frame the discussions in contractual arrangements will help to manage the flexibility and avoid conflict escalation. It may involve including rights to modify specifications (at a cost) in the contract. Some basic principles can help avoid unnecessary renegotiations: - Be aware of trade-off between the risk borne by investors and the probability of renegotiations: less renegotiation when award based on higher transfer fee vs. lowest tariff and rate of return vs. price cap. - Less renegotiation when a credible regulatory framework is in place (prior to reforms): existence of regulatory body and regulatory framework embedded in law (rather than decree or contract). - Less renegotiation when regulation is by objectives (on performance indicators) rather than by means (investments) as it gives more flexibility (notably in terms of technology and strategies) to reach the objectives. For similar reasons avoid multiplicity of criteria (potentially contradictory and leverage for renegotiation) and using criteria likely to be modified soon (tariffs). - Avoid making renegotiations too easy and allowing possibility to default cheaply. Use of performance bonds[20], step-in rights[21], renegotiation fees and contractual stipulations specifying under what circumstances revisions shall be considered can limit the occurrence of renegotiations and improve their efficiency. - Develop credible and realistic terms of reference and contract specifications and avoid changes in policy orientation (adding additional provisions – such as delivery to the poor - after award).

Tools and practices:

- OECD (2006). Concessions: www.oecd.org/dataoecd/36/6/35967639.pdf
- Variation clauses under the UK Private Finance Initiative: www.hm-treasury.gov.uk/documents/public_private_partnerships

[20] Bank guarantees that indemnify the public party if the private sector fails to fulfil its obligations.
[21] Step-in rights allow government to take over the operation of a concession when the concessionaire is not performing according to specified standards.

Principle 19. Setting dispute resolution mechanisms. Dispute resolution mechanisms should be in place through which disputes arising at any point in the lifetime of an infrastructure project can be handled in a timely and impartial manner.

Specificities of the sector	Issues for governments
Disputes have been common in water and sanitation in recent years. Highly politicised disputes that generate social unrest and may threaten the political power. Disputes amplified in context of weak institutional, regulatory and legal framework, where contract enforcement is an issue. The poor pay disproportionally the consequences of delayed investments and inaction that may arise from long-lasting disputes.	Embed dispute resolution mechanisms in contractual arrangements (performance bond, contingencies for renegotiation, recourse to international arbitration). Clarify remedies available to private investors in case of dispute. Anticipate disputes and prefer amicable settlements to arbitration. This can be encouraged by creating contractual disputes panels, which meet and discuss the contract regularly. Bilateral investment treaties allow foreign investors to have access to international arbitration (i.e. ICSID) even though the contract may provide for local courts jurisdiction. Inform local authorities of international obligations and of national consequences of breach of international obligations. Be aware of trade-offs between complete contracts and flexibility to adapt to changing environment; and between systematic recourse to external independent referees and transaction costs.

Tools and practices:

- In Senegal, Manila and Yerevan: contractual arrangements provide good framework for dealing with issues.
- Expert panels (Chile): www.ppiaf.org/documents/gridlines/22RegDisp.pdf
- The contract for the Prospect water filtration plant, Sydney Australia.
- World Bank Alternative Dispute Resolution Manual: http://rru.worldbank.org/Toolkits/AlternativeDisputeResolution
- ICSID cases and documents: www.worldbank.org/icsid

Encouraging responsible business conduct

Principle 20. Responsible business conduct. Private sector participants in infrastructure should observe commonly agreed principles and standards for responsible business conduct.

Specificities of the sector	Issues for governments
Water is a basic human need. Important interaction with users. Important economic, social, environmental and political repercussions. Water and sanitation are key elements of development policies and generate important political interest. Labour intensive industry. Dimension all the more important in weak governance environment (where the needs are greatest). Diversity of private actors involved and of the key issues in terms of business conduct: large, concentrated operators have significant negotiating power, especially in weak governance zones; small-scale operators may enjoy limited knowledge of standards; the water activities of big users may escape public scrutiny as being a side (even if sometimes substantial) share of their activities; financial groups may overlook the specificities of water as a basic need in financial optimisation.	Support the use of principles and standards of responsible business conduct as reflected in intergovernmental instruments such as the OECD *Guidelines for Multinational enterprises* and the ILO *Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy*. Governments should consider providing capacity building to small-scale operators. Governments can be supported in their efforts through appropriate partnerships with business organisations to strengthen the institutional and regulatory framework, especially in weak governance zones.

Tools and practices:

- Aquafed Code of Ethics: www.aquafed.org/pdf/AquaFed_Code_of_Ethics_2005-07-11.pdf
- OECD Guidelines for Multinational enterprises: www.oecd.org/daf/investment/guidelines
- OECD Risk Awareness Tool for Multinational enterprises in Weak Governance Zones: www.oecd.org/daf/investment/wgz
- ILO MNE Declaration: www.ilo.org/public/english/employment/multi/index.htm
- UN Global Compact 10 Principles: www.unglobalcompact.org/AboutTheGC/TheTenPrinciples
- UN Principles for Responsible Investment (UN PRI) and the water specific set of principles: www.unpri.org
- Equator Principles: www.equator-principles.com

Principle 21. Good faith and commitment. Private enterprises should participate in infrastructure projects in good faith and with a commitment to fulfil their commitments.

Specificities of the sector	Issues for governments
Long-term partnerships in a vital sector. Important information asymmetry and little reversibility over the short-run, leading to potential strategic renegotiations. Very specific knowledge and technology. Important political and social repercussions of failures. Important reputational risk.	The government should clearly communicate its expectations: - In terms of local capacity building and transfer and diffusion of technologies and know-how. - In terms of timely, reliable and relevant information disclosure on activities, structure, financial situation and performance (including participating with good faith and commitment to due diligence processes). Private enterprises should be made aware of dispute resolution mechanisms provided for in the contract and of the existence of any investment protection agreement. In case of dispute, consider first alternative dispute resolution mechanisms, such as conciliation and mediation.

Tools and practices:

- OECD Principles of Corporate Governance: www.oecd.org/daf/corporate/principles
- OECD Guidelines for Multinational enterprises: www.oecd.org/daf/investment/guidelines
- OECD Policy Framework for Investment (chapter 7): www.oecd.org/daf/investment/pfi

Principle 22. Fight against corruption. Private sector participants, their subcontractors and representatives should not resort to bribery and other irregular practices to obtain contracts, gain control over assets or win favours, nor should they accept to be party to such practices in the course of their infrastructure operations.

Specificities of the sector	Issues for governments
Multi-stakeholder projects, multi-layer administration and important information asymmetry. Limited competition. Greater needs are in countries where governance is weak and local governments lack capacity.	Promote public commitment by business to integrity and to abstain from improper involvement in local political activities. Encourage joint public campaigns to promote integrity. Promote greater transparency around transactions through competitive bidding and publication of contracts. Encourage companies to communicate on anti-corruption policies and internal management systems to the staff, including through training programmes. Encourage integrity throughout the supply chain through transparent sub-contracting mechanisms and communication on anti-corruption policies to sub-contractors. Encourage companies to limit incentives: particular attention to activities where contacts with consumers are high (connections, repairs), appropriate remuneration of staff. Staff and consumers should be given opportunities to report on reprehensible behaviours. Consider whistle blower protection. Credible threats such as forgoing recourse to international arbitration if corruption is proved – see ICSID award in World Duty Free Company Limited v Kenya case - or including anti-bribery provisions in financial institutions due diligence requirements (disclosure of past violations of corruption laws, adoption of anti-bribery programmes) can provide strong incentives to refrain from corrupt practices.

Tools and practices:

- Coalitions to fight corruption: CIPE (www.cipe.org/programs/corruption), WIN (www.waterintegritynetwork.net).
- OECD Anti-Bribery Convention: www.oecd.org/daf/nocorruption/convention
- OECD Guidelines for Multinational enterprises: www.oecd.org/daf/investment/guidelines
- OECD Risk Awareness Tool for Multinational enterprises in Weak Governance Zones: www.oecd.org/daf/investment/wgz
- Pact for Promoting Integrity and Fighting Corruption (Brazil): www.unglobalcompact.org/docs/issues_doc/7.7/case_stories/BAC_2D.1.pdf
- ICC Rules of Conduct and Recommendations for Combating Extortion and Bribery: www.iccwbo.org/policy/anticorruption
- Transparency International Integrity Pact: www.transparency.org/global_priorities/public_contracting/integrity_pacts.
- Transparency International Business Principles for Countering Bribery: www.transparency.org/global_priorities/private_sector/business_principles Anti-corruption Agreements in water sector based on TI Business Principles in Colombia (www.waterintegritynetwork.net/page/238), Argentina (www.transparency.org/news_room/latest_news/press_releases/2005/05_12_15_argentina_water_sector).- World Bank Institute Business Fighting Corruption website and guide for collective action: http://info.worldbank.org/etools/antic
- OPIC requirements to allocate funding: www.opic.gov/pubs/handbooks/guides/documents/opicanticorruptionhandbook0906.pdf

Principle 23. Communication with the consumers. Private sector participants should contribute to strategies for communicating and consulting with the general public, including vis à vis consumers, affected communities and corporate stakeholders, with a view to developing mutual acceptance and understanding of the objectives of the parties involved.

Specificities of the sector	Issues for governments
Ultimate objective is universal access and sustainable use of water resources. Water is a basic need and generates high social unrest if not perceived to be delivered adequately. Consumer trust is a key element of reform, notably in support to pricing policy. Consequences for health of better water and sanitation practices are important.	Engage companies in the existing monitoring and communication process when put in place by the public agency/regulator. Encourage companies to be responsive to clients' claims and provide transparent and effective procedures to address consumer complaints. Involve companies in the awareness campaigns (to promote hygiene for instance). Encourage companies to communicate to consumers price increases and other major changes in service delivery and be in line with service quality and users needs.

Tools and practices:

- SDE in Senegal launches surveys to assess consumers' satisfaction and provides free phone number for customers' information.
- OECD Key issues and recommendations on consumer protection: www.oecd.org/document/2/0,3343,fr_2649_34343_2391682_1_1_1_1,00.html
- OECD handbook on information, consultation and public participation in policy-making: www.oecd.org/gov
- OECD Recommendation on Common Approaches to the Environment and Officially Supported Export Credits: www.oecd.org/dataoecd/26/33/21684464.pdf

Principle 24. Awareness and responsibility for the social consequences of actions. Private sector participants in the provision of vital services to communities need to be mindful of the consequences of their actions for those communities and work, together with public authorities, to avoid and mitigate socially unacceptable outcomes.

Specificities of the sector	Issues for governments
Important economic, social, environmental and political repercussions. Consequences for the poor: tariff setting, design of new investments, choice of technology, connection policy, water quality. Consequences for the environment: water conservation and system management (maintenance), treatment of effluents.	Promote assessment and discussions of the consequences for the poor of the technology choices, tariff setting policy, investment planning. Engage private actors in initiatives aimed at mapping the location of the poor and better understanding of demand. Promote contribution to sustainable development by evaluating the full impact of activities on environment and continuously seeking to improve environmental performance. Favour adoption of basic principles of water demand management, such as water conservation, adoption of metering (for efficiency, water conservation and greater empowerment of consumers), reduction of leaks through improved maintenance and technical measures and re-use of water when water scarcity calls for it. Promote adoption of environmental management standards such as ISO 14001, and of ISO/TC 224 guidelines for service activities relating to drinking water and wastewater systems. Promote awareness on the consequences for employees of transfer of ownership: share information before and after transfer on measures affecting the employees and cooperate with the employee representatives to forge the common values of the company. Promote reporting of economic, environmental, and social performance. Encourage companies to engage with their financiers over the environmental and social consequences of their decisions and actions.

Tools and practices:

- Pro-poor strategies in Manila (Manila Water) and Soweto (JOWAM).
- Management of resource scarcity: Namibia and Singapore reduction in unaccounted for water and reused water technology.
- ILO Declaration on Fundamental Principles and Rights at Work: www.ilo.org/declaration
- Human Rights' Guide for Integrating Human Rights Into Business Management: www.blihr.org/Reports/GIHRBM.pdf
- The CEO Water Mandate: www.unglobalcompact.org/Issues/Environment/Water_sustainability/index.html
- Danish Institute for Human Rights Human Rights Compliance Assessment: www.humanrightsbusiness.org
- Global Reporting Initiative: www.globalreporting.org
- The Guaranteed Standards Scheme, OFWAT, UK: www.ofwat.gov.uk
- UK Protection of Employment Regulations (TUPE): www.berr.gov.uk/employment/trade-union-rights/tupe/page16289.html
- Norms ISO: www.iso.org
- United Nations Guidelines for Consumer Protection: www.un.org/esa/sustdev/sdissues/consumption/cpp1225.htm

CHAPTER III. WATER AT A GLANCE

45. In order to support the conceptual work on private sector participation to water and sanitation infrastructure, a systematic review of country experiences has been carried out based on a common framework. It involves some 30 countries in Africa, Latin America and Asia/ Pacific (see table 3.1) in the "dimensions" (see table 3.2) of key importance for private sector involvement in the water and sanitation sector. The resulting OECD *Water at a Glance* information base constitutes the basis for this section on regional trends and practices.

Table 3.1. Countries in *Water at a Glance*

Africa	Asia	Latin America
Burkina Faso	Bangladesh	Argentina
Ethiopia	Cambodia	Bolivia
Ghana	China	Brazil
Kenya	India	Chile
Mali	Indonesia	Colombia
Mauritania	Malaysia	Honduras
Nigeria	Nepal	Mexico
Senegal	Philippines	Peru
South Africa	Singapore	
Tanzania	Thailand	
Uganda	Vietnam	
Zambia		

Table 3.2. Selected Available information in *Water at a Glance*

Indicators	Sub-Indicators	Source
Demography	Total and urban population in 2005 and 2015 Total and urban population growth 2005-2015 Population density (pop/km²) 2005 and 2015	Un Population division
Water resources	Water scarcity Over withdrawal Foreign dependency ratio Water uses (Agriculture, Domestic and Industry)	FAO Aquastat
Access to water and sanitation	Improved drinking water coverage in urban/rural Areas in 1990 & 2004 Household connection in urban/rural areas in 1990 & 2004 Improved sanitation coverage in urban/rural areas in 1990 & 2004 On track to water/sanitation MDG?	Various sources incl. WHO/Unicef Joint Monitoring programme.
Water management	Percentage of wastewater treated Average domestic consumption of water in m3/hab/yr Continuous water supply Average hours of access to tap water (hours/day) Estimate of unaccounted for water/non revenue water Operating cost coverage ratio	Various sources

	Billing collection rate Staff per 1000 connections	
Water institutional & policy framework	Elements of institutional and policy framework Presence of regulatory agency, year of introduction, independence and activities (monitoring quality, roll out and consumers complaints?) Dispute resolution mechanisms Corporatization of local operators Level of decentralization and devolution of means and responsibilities	Various sources
Private sector participation	Presence of private operators % of population served by the private sector Location, sector, type of contract Year of introduction of private sector participation Past disputes	Various sources
Investment needs	Investment needs to reach the MDGs (water and sanitation) Investments gap (water and sanitation MDG) ODA to the water sector Private investment	Various sources, incl. OECD on ODA and World bank PPI database on investment.

46. A word of caution is necessary regarding the quality of data and particularly of time series. Changes in monitoring methods within countries and heterogeneity across country methodology may considerably alter the reliability of data and make comparisons over time and across countries difficult. Setting aside the potential measurement problems of absolute levels, broad trends still emerge clearly from the information collected for *Water at a Glance*. The available data is also qualified and supported by qualitative information that allows for a better understanding of specific contexts.

Water availability and access

Wide disparity in water resources, both across and within countries

47. According to FAO data and analysis, Latin America is well endowed with water resources. The region receives 30 per cent of precipitation and generates 33 per cent of the world's water resources, while representing 15 per cent of the world's total land surface and hosting 10 per cent of the world's population. However, some regions, usually the most populated areas, experience some water scarcity.

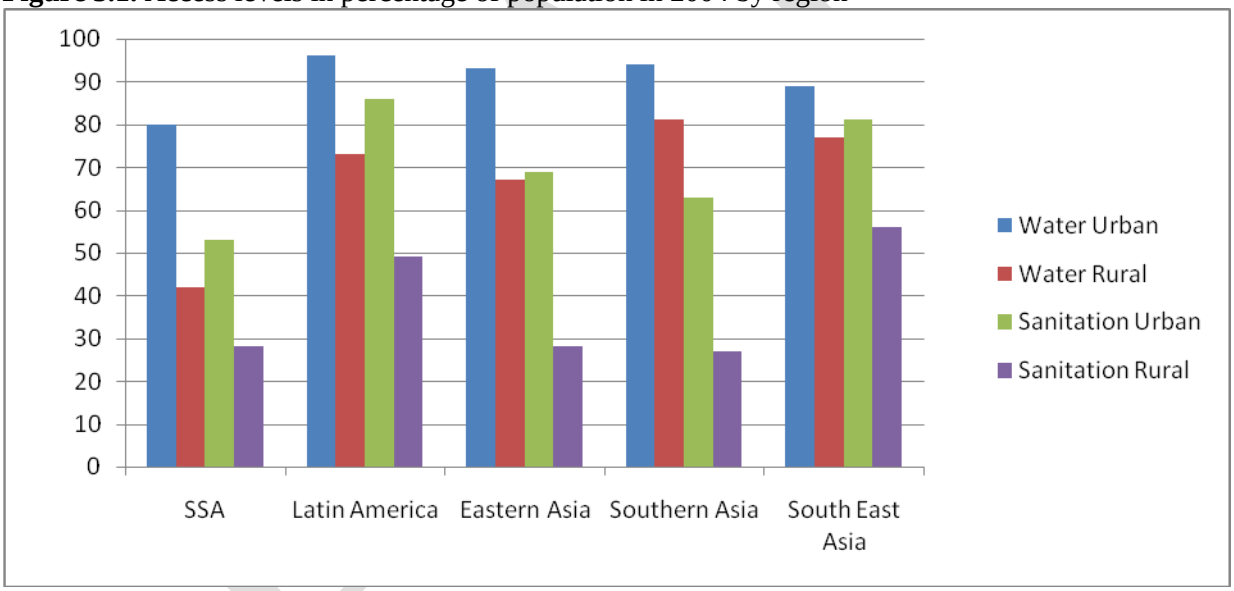
48. Asia is also relatively well endowed with water resources, compared to its surface: with 22 percent of world precipitation and 28 percent of its water resources for 15 percent of land surface. However, the continent hosts 53 percent of world population and experiences great disparity of distribution of water resources and water use conditions across countries and regions. Among the countries under review, India and China are close to experiencing water scarcity, with available water close to FAO's estimated threshold of 2000 m^3/inhabitant/year. Urbanization, waste disposal in rivers, in addition to arsenic contamination in countries such as Nepal and Bangladesh, also largely contribute to deteriorating water quality and constraining safe water supply. China has responded to the water quality challenge by strengthening standards and increasing inspections. In this context, the Beijing

Institute of Public and Environmental Affairs launched in 2006 an online database recording the pollution of 2500 enterprises[22]. This practice remains however uncommon among Asian countries.

49. Renewable water resources for the whole of Africa amount to less than 9 percent of global renewable resources (for 22 percent of the world's emerged landmass and 14 percent of the world's population). Moreover, accounting for the likely impact of climate change, demographic pressures and economic development, UNEP estimates that by 2025 some 25 countries in overall Africa could be subject to water stress and water scarcity, compared to 17 in 2003-2007. Water availability and quality are further affected by industrial pollution, poor sanitation and sewage practices, inefficient resource allocation and wastage (over 50 percent of the water supply wasted or unaccounted for in most African cities). However, here again, disparity of resource endowment across countries is very important: Africa hosts both among the driest countries in the world (in Northern and Southern Africa), and among the best endowed (Central Africa accounts for 48 percent of Africa's resources for only 18 percent of its area, with DRC alone representing 23 per cent of internal renewable water resources in Africa). In addition, with total water annual withdrawal of 215 km^3 (barely 5.5 percent of the renewable water resources on the continent and less than 6 percent of world withdrawals), African resources are only marginally exploited under managed conditions.

The challenge of increasing access: less than a quarter of the reviewed countries are expected to fully meet the water and sanitation Millennium Development Goals (MDGs)

Figure 3.1. Access levels in percentage of population in 2004 by region



Source: WHO/UNICEF Joint Monitoring programme

50. Sub-Saharan Africa, Asia and Latin America display diverse levels of access to water and sanitation, as shown by figure 3.1. However, common features can be highlighted. Globally, water coverage in rural areas still lags far behind compared with urban areas. Similarly, sanitation, and more specifically rural sanitation coverage, is very limited and quasi absent in some areas. The dramatic situation of sanitation constitutes a major issue in terms of health consequences and impacts on gender equality, but also because the volume of sewage already represents the main source of water pollution. If urban areas display much higher coverage rates, cities and peri-urban areas infrastructure still face a

[22] www.ipe.org.cn

great stress because of combined pressure of population growth and migration from rural areas that have already led in some instances to deterioration in coverage rates. The negative consequences of improper sanitation are also much more acute in slums where overstretched poor infrastructure is compounded by high population density.

51. Since the 1990s, Latin America has made considerable progress in improving access to drinking water. From 83 per cent in 1990, the region's total drinking water access increased to 91 per cent by 2004. Consequently, the region has already met the drinking water related target of the MDGs. However, the rural sector, with an access level at 73 per cent in 2004, suffers from much lower access than its urban counterpart (where access stands at 96 percent in 2004) and is not likely to meet the MDG target of 80 per cent by 2015. Progress in increasing sanitation coverage has also been far less successful. Overall, sanitation coverage has increased from 68 percent in 1990 to 77 percent in 2004. However, statistics mask the very low level of rural sanitation, which remains below 50 per cent, and would need to increase to 68 per cent by 2015 to meet the MDG. This is reflected in table 3.3, where no country (except Mexico) is expected to reach the MDG target for water in rural areas and only Argentina is on track to reach the MDG target for sanitation in both urban and rural areas.

Table 3.3. Millennium Development Goals progress in selected Latin American countries

	Argentina	**Bolivia**	**Brazil**	**Chile**	**Colombia**	**Honduras**	**Mexico**	**Peru**
On track to water MDG?	Yes (urban) Possible (rural)	Yes (urban) No (rural)	Yes (urban) No (rural)	Yes (urban) No (rural)	Yes (urban) No (rural)	Likely (urban) No (rural)	Yes	No
On track to sanitation MDG?	Yes	No	No	Yes in urban. No in rural	Yes (urban) No (rural)	No but rapid progress	Yes (urban) No (rural)	No

Source: OECD Water at a Glance, based on various sources, incl. UNDP (2006).

52. Asia is a highly heterogeneous continent. Malaysia, Singapore, Vietnam and Thailand present outstanding performance with quasi universal access to water and sanitation services. Elsewhere, access to drinking water in urban areas remains high (especially in China, India and Nepal), but rural access and especially access to sanitation lag far behind. In terms of progress towards MDGs (table 3.4), India, Malaysia, Singapore, Vietnam and Thailand are either on track or have already achieved the water and sanitation targets. Several Asian countries however, are not expected to meet their water and sanitation MDG targets by 2015, and some, including China, Indonesia and Philippines, are regressing in areas such as urban water supply. As highlighted earlier, the decline can be largely attributed to rapid urbanization and the subsequent development of informal peri-urban settlements.

Table 3.4. Millennium Development Goals progress in selected Asian countries

	Bangladesh	**China**	**India**	**Indonesia**	**Malaysia**	**Nepal**	**Philippines**	**Singapore**	**Thailand**	**Vietnam**
On track to water-MDG?	No	No	Yes	No	Yes	Yes	No	Yes	Yes	Yes
On track to sanitation-MDG?	No	No	No	No	Yes	No	Yes (urban) No (rural)	Yes	Yes	On track

Source: OECD Water at a Glance, based on various sources, incl. ADB (2007), UNDP (2006).

53. Sub-Saharan Africa has the lowest drinking water coverage and the lowest sanitation coverage in the world, with over 322 million people without access to safe drinking water and 463 million without access to improved sanitation. Sub-Saharan Africa has made progress recently in improving population access to drinking water and sanitation: from 49 per cent in 1990 to 56 per cent in 2004 for safe drinking water, and from 32 per cent in 1990 to 37 per cent in 2004 for improved sanitation facilities. However, progress remains inadequate in relation to needs. Consequently, the sub-continent is not likely to achieve the MDG targets of 75 per cent for drinking water and 66 per cent for sanitation by 2015. As shown in table 3.5, only four of the nine countries surveyed are likely to fully meet the MDG water target and just two the sanitation target.

Table 3.5. Millennium Development Goals progress in selected African countries

	Burkina Faso	**Ghana**	**Kenya**	**Mauritania**	**Mozambique**	**Senegal**	**South Africa**	**Uganda**	**Zambia**
On track to water-MDG?	Yes (urban) No overall	No	Likely	No	No	Likely	Yes, quasi universal service by 2008	Likely but low initial target	No
On track to sanitation-MDG?	Yes (urban) No overall	No	No	No	No	No	Yes, but not the universal service target by 2010	Likely but low initial target	No

Source: OECD Water at a Glance, based on AfDB, EUWI, WSP (2006) and UNDP (2006).

54. Most importantly, and despite the progress, the dynamics appear highly unfavourable. In contrast to other developing regions, Sub-Saharan Africa continues to see a substantial increase in the absolute number of unserved people. Some 60 million between 1990 and 2004 joined the pool of people without safe access to drinking water and a further estimated 47 million people are expected by 2015. Similarly, the perspective is of a further increase of 91 million people without access to sanitation services by 2015. Even if the MDGs are reached by 2015, the backlog of unserved people will remain substantial. It is estimated at some 234 million people without access to drinking water and 317 million without access to sanitation.

Operational performance of the water sector: a contrasted picture

55. Just connecting people to water and sanitation is not enough. Sustainable access requires efficient operation and maintenance of water sector network and utilities. In order to allow for a better understanding of the state of operational management of water systems in the selected countries, the OECD *Water at a Glance* information base identifies five operational management indicators as defined in table 3.6.

Table 3.6. Indicators of operational management

Continuous water supply (Average hours of access to tap water in hours/day)	Indicator of both availability and quality of water.
Estimate of unaccounted for water	Unaccounted for water indicates the quality and level of maintenance of water networks.

(Amount of water lost through pipes)	15-20% is considered good practice in OECD countries.
Operating cost coverage ratio (Total annual operational revenues divided by total annual operating cost)	It measures the extent to which consumer tariffs and additional fees or subsidies contribute to overall operations and minor maintenance costs. A ratio below 1 implies that incoming fees do not meet costs, which indicates an unsustainable system.
Billing collection rate (Income as a percentage of billed revenue)	It indicates the level of bill recovery. A low percentage reflects low willingness or capacity to pay or discontent with the service and may lead to a cycle of under-funding and deterioration in operations and maintenance.
Staff per 1,000 connections (Number of water utility employees per 1000 connections)	Crude indicator of labour productivity. It gives a rough estimate of the efficiency of network management: the higher the number, the lower the productivity. The international standard is about 2 per 1,000 (depending on local conditions).

Asia: some outstanding performance with pockets of inefficiencies

56. Based on these indicators, Singapore and the Phnom Penh Water Supply Water Authority in Cambodia rank highest in Asia. They display continuous water supply and outstanding performance (among the highest ranking globally) in terms of reduction of water losses with levels at 4.5 and 6 percent respectively, to be compared with the OECD good practice of 15-20 percent and in stark contrast with levels over 40 percent in Bangladesh, Indonesia, Malaysia and the Philippines. Staff ratio is below 5 in the 2 instances.

57. Elsewhere, especially in countries such as China and India, performance may vary widely across regions and cities. Continuity of water supply for instance fluctuates substantially within countries: several cities in China, Phnom Penh and Banteay Meanchey in Cambodia, Bangkok and 88 percent of Manila receive continuous water supply. By contrast, only 24 percent of Sihanoukville (Cambodia) receives continuous water supply. China and India also demonstrate very diverse performance in terms of water losses across their territories: from the good performance of 13 percent in Jamshedpur and Mumbai to almost half of water lost in Bangalore. Staff ratio also varies significantly within countries: parts of Bangladesh, Cambodia, and India may employ over 15 staff per 1000 connections.

58. Globally, the selected Asian countries report a good level of billing collection (quasi universal in Cambodia, China, Jakarta, Manila and Singapore), above the average ratio of other developing regions. However, there are causes for concern in India, where two thirds of utilities do not recover their costs and billing collection is below 70 percent, potentially signalling issues of financial sustainability in the long run.

Table 3.7. Operational performance indicators in selected Asian countries

	Continuous water supply	Estimate of unaccounted for water	Operating cost coverage ratio	Billing collection rate	Staff per 1,000 connections
Bangladesh	Mostly up to 4h/d 24h/d in Chittagong and Dhaka (2005)	40% to 50%	1.18. Overall 70% in Chittagong, 130% in Dhaka, lower elsewhere (2005)	83% in Chittagong, 86% in Dhaka (2005)	22.1 in Chittagong, 9.9 in Dhaka (2005)
Cambodia	24h/d in Phnom Penh and Banteay Meanchey. 25% of Sihanoukville (2003)	6% in Phnom Penh (2003)	Full cost recovery of the Phnom Penh Water Supply Authority	100% in Phnom Penh, Sihanoukville (2003)	Overall 10-15 4 in Phnom Penh 19.7 in Sihanoukville (2003)
China	24h/d in many cities	38% in Henan, 18% in Chengdu	1.09 (2005)	98% (2005)	12 in Henan (2005)
India	1/4000 utilities meet 24h/d. 4-5 h/d in Bangalore, Chennai and Mumbai	From: Jamshedpur (12.8%) Mumbai (13.6%) Jabalpur (14.3%) Chennai (17.0%). To Nashik (59.6%), Amritsar (57.4%), Nagpur (51.9%) Bangalore (45.1%)	1/3 of the utilities recover their costs including Chennai, Mumbai, Jamshedpur, Nagpur, Visakhapatnam, Bangalore, Coimbatore	68% (2005)	Overall about 10, 5.2 in Bangalore, 13.3 Chennai, 17.2 Mumbai
Indonesia	92% of Jakarta	40% to 50%; PDAMs at 36%	1.39 (2004); 80% in Jakarta (2003)	98% Jakarta (2003)	5.3 in Jakarta (2003). Higher in smaller towns
Malaysia	24 h/d, except during drought	45% in Selangor (2002)	0.66 in Selangor (2002)	N/A	N/A
Nepal	4 days/week in Kathmandu	37% for NWSC in Kathmandu (2001)	0.96 for NWSC in Kathmandu (2001)	70% for NWSC Kathmandu (2001)	N/A
Philippines	No and low water pressure. 88% have in Manila (2003)	48% in Manila (2004)	1.34 (2004), 1 in Manila (2003)	98% Manila (2003)	4 in Manila (2003) Higher in smaller systems
Singapore	Yes	4.5%	N/A	99%	2.5
Thailand	Yes in Bangkok	No formally published data.	0.7 in Bangkok	N/A	4.8 in Bangkok
Vietnam	20.2h/d	37%		95%	12

Source: OECD Water at a Glance, based on local sources, ADB (2007) and IB-Net.

Latin America: some financial sustainability issues

59. In Latin America, higher performers include Chile, Brazil and Argentina. Honduras, Peru, and Bolivia present lower performance, in particular with regards to continuous water supply, operating cost coverage ratio and billing collection ratio. Here again, important variation is noticeable both across countries and within a respective country. For instance, great variation in continuity of water within countries exists, depending on the state of municipal infrastructure, local administration of services and availability of water. This within-country range is particularly noticeable in Mexico and Brazil where water availability is disparate across regions.

60. The amount of water lost through pipes varies across selected countries but remains overall high, from 34 per cent in Chile, to some 40 per cent in Brazil, 42-44 per cent in Mexico, 45 per cent in Peru, and almost 50 per cent in Colombia, largely falling short of the 15-20 per cent considered good practice in OECD countries. They are also far from the good performers in Asia and Africa that are

Singapore and Phnom Penh with respective levels of 4.5 and 6 percent and Windhoek, Namibia, where unaccounted for water fell to 10 per cent in 2006.

61. Operating cost coverage ratio also varies widely, depending on local conditions and practices. In Peru, 6 out of 46 operators have a negative operating margin. In southern Mexico, cities such as Oaxaca suffer from ratios as low as 14.9 per cent. In Argentina, Chaco, registers 110.5 per cent, while Catamarca, a more developed province, registers 75.9 per cent. In Bolivia, La Paz and El Alto register 70 per cent while the water operator in Santa Cruz de la Sierra City enjoys a ratio of 142 per cent. Some caution is however in order when evaluating the operating cost coverage ratio. Higher ratios may indicate a higher level of financial health for the operator, but may not necessarily reflect a more efficient and updated network infrastructure. In some cases, it may hide a lack of re-investment into infrastructure[23] that may cause sustainability issue over the longer run. Ideally, the operating cost coverage ratio should be evaluated alongside data on re-investment.

Table 3.8. Operational performance indicators in selected Latin American countries

	Continuous water supply	**Estimate of unaccounted for water**	**Operating cost coverage ratio**	**Billing collection rate**	**Staff per 1,000 connections**
Argentina	Overall 24h/d. Regional rationing in dry periods	31% BA, 50% Catamarca; 45% Chaco; 40% Tucuman (2006)	16% BA, 75.9% Catamarca; 110.5% Chaco; 97.2% Tucuman (2006)	86% BA, 57.2% Catamarca; 75.9% Chaco; 71.8% Tucuman (2006)	N/A BA, 2.2 Tucuman (2002); 2.7 Trelew (2005)
Bolivia	No. Cercado 15h/d. 24h/d in La Paz and El Alto	28% La Paz and El Alto 29% Santa Cruz de la Sierra City 21% Sucre (2005)	79% La Paz and El Alto; 142% Santa Cruz de la Sierra City; 79% Sucre (2005)	66% Santa Cruz de la Sierra City (2005)	1.7 La Paz and El Alto; 2.9 Sucre (all 2005)
Brazil	Regional rationing in dry periods	39.8% national avg; 32% in Sao Paulo, 44% in Porte Alegre (2006)	158% Porte Alegre, 188% Sao Paolo (2006)	93% Sao Paolo, 89% Porte Alegre (2006)	2.62 in Sao Paulo (2006); (3.7) state utilities, (5.8) municipal utilities (6.4) private utilities (2000)
Chile	Yes	34% national avg (2006) 28% Santiago (2005)	164% Santiago (2006)	116% Santiago (2006)	1.03 Santiago (2006); 2 to 3 elsewhere (2006)
Colombia	No. 2/3 households in large urban areas. No continuity in smaller municipalities. 24h/d in Cartagena (2005)	49% national avg; 45% Los Patios; 38% Puerto Carreno (2003); 41% Cartagena (2005)	162% in Los Patios (2003); 169% in Puerto Carreno (2003); 145% in Maicao (2005); 108% in Barrancas (2005)	50% in Los Patios; 79% in Puerto Carreno (all 2003); 99% in Cartagena (2005)	4.4 Los Patios (2003); 9.1 Puerto Carreno (2003); 2.3 Cartagena (2005); 4.85 Barrancas (2005)
Honduras	No	< 40%	NA	NA but low	NA

[23] Pineda (2002).

Mexico	No. 55% of users have intermittent access (2000). Cancun 12h/d (2005)	42-44% national avg	110% Aguascalientes; 90.83% Monterrey; 223.3% Toluca, 59.3% Hermosillo, 14.9% Oaxaca	81.1% national avg; 70% Tijuana; 99% Monterrey.	5.1 Mexico City, 5.3 Toluca, 3.7 Monterrey, 3.1 Tijuana, 2.8 Aguascalientes, 6.6 Oaxaca
Peru	No. 17h/d on avg. in 2005. 37% of operators provide less than 12h/d, 37% between 12 and 20h/d and 26% over 20h/d	45% national avg; 30% Tacna; 57% Loreto; 41% Lima (2005)	89% Loreto, 141% Huancayo, 126% Lima (2005)	NA	1.4 in Lima; 3.1 in Loreto

Source: OECD Water at a Glance, based on local sources, IB-Net, IADB (2006) and WB (2006).

62. Extremely low billing collection rates are found in Honduras and Peru, while higher rates are found in Chile, Brazil and Mexico. However, in Mexico, this indicator varies across large cities from the high end of the spectrum at 99 per cent in Monterrey, 89 per cent in Chihuahua and 100 per cent in Campeche, to 57 per cent in Veracruz and 42 per cent in Tepic. Similar contrast can be found in Brazil, where Sao Paolo registers a billing collection rate of over 90 per cent, but where overall collection losses for state utilities were approximately 12 per cent in 2000.

63. Interestingly in Brazil, the staff ratio in 2000 was found by the World Bank lower for state utilities (3.7) than for municipal utilities (5.8) and privately operated utilities (6.4). In Colombia, Puerto Carreno (9.1) has a particularly high ratio, in contrast to more efficient labour ratios such as Riochacha (2.9) and Cartagena (2.3). In Mexico, major cities such as Acapulco (12.4) and Oaxaca (6.6) contrast greatly with Monterrey (3.7) and Tijuana (3.9). In Chile, the ratio is generally low, from 2-3 in most of the country, to a low of 1.03 in Santiago.

64. Finally, it should be noted that the amount and quality of available data varies greatly across countries. For example, in Argentina there is no comprehensive data on water quality and sanitation, and the limited available data in the sector is suspect, especially given recent scandals surrounding the quality of data gathered by the national statistic bureau, INDEC. In many countries, such as in Argentina and Mexico, operators self report their performance indicators and very little external auditing occurs. Chile is a notable exception, where privately contracted external auditors complete data gathering and monitoring functions.

Africa: a contrasted continent

65. In Africa, South Africa stands out as the best performer; especially in terms of continuity of water service (98 per cent of population has continuous access to the water supply). However, countries such as Senegal and Uganda present some outstanding performance compared to the rest of the continent, especially in capital cities.

Table 3.9. Operational performance indicators in selected African countries

	Continuous water supply	Estimate of unaccounted for water	Operating cost coverage ratio	Billing collection rate	Staff per 1,000 connections
Burkina Faso	No	15% (2005)	135% (2005)	72% (2005)	9.7 (2005)
Ethiopia	12h/d	30 to 35% (2006)	80% on average (2006)	NA	6.7 in Adama, 11.5 in Awassa, 28 in Dire Dawa, 16.9 in Harar (2002)
Ghana	No	50% to 60% (2006)	NA	NA	60 (2006)
Kenya	Not everywhere. 24h/d in Nyeri. 19h/d in Mombasa	50% (2004)	120% in Nyeri, 94% in Mombasa, 57% in Nakuru (2000)	54% in Nairobi (2007)	7.3 in Mombasa 10.8 in Nyeri (2000)
Mali	No	32% for EDM (2005)	135% for EDM (2005)	94% for EDM (2005)	5.9 for EDM (2005)
Nigeria	No, 4 to 16h/d (4 in Abakaliki, 16 in Osogbo)	Up to 83% (2004)	50% in Maiduguri. 19% in Abakaliki. 77% in Kastina (2003)	As low as 43% (2004)	Up to 48 (2004)
Senegal	Yes in Dakar	20% (2003)	158% for SDE (2003)	98% (2005)	3.2 (2005)
South Africa	Yes for 98% of population	31% on avg, 19.2% in Cape Town, 29% in Johannesburg (2006)	87% in Cape Town. 92% in Johannesburg (2006)	83% in Cape Town, 76% in Johannesburg (2006)	1.6 in Cape Town. 1.2 in Johannesburg (2006)
Tanzania	No	Range from 28% to 86% (2006)	Between 100 and 110% (2005)	60% to 80% (2005)	14 (2005)
Uganda	22h/d	31% (2007)	141% (2005)	90% (2006)	7 (2007)
Zambia	15h/d on average. 11h/d in Lusaka	48% on avg, 55% in Lusaka (2005)	77% on avg, 78% in Lusaka (2005)	77% on avg, 81% in Lusaka (2005)	From 8 to 18. 11 in Lusaka. (2005)

Source: OECD Water at a Glance, based on various sources.

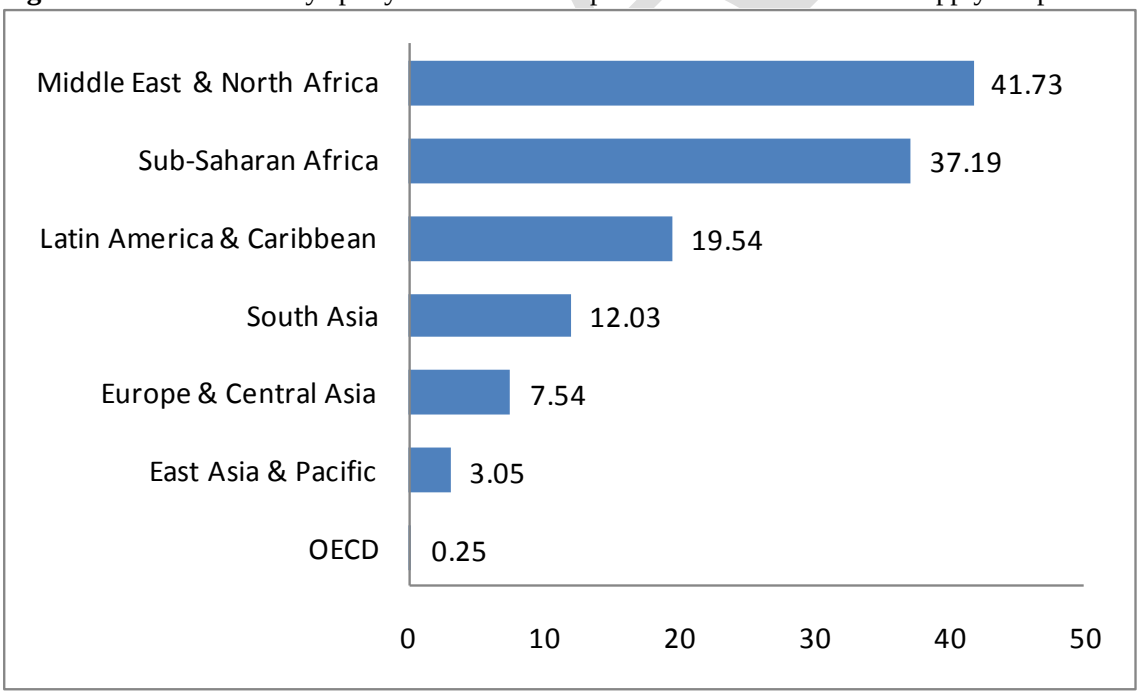
66. Operational performance varies substantially across Africa, as shown by the diversity of situations highlighted in table 9. For instance, continuity of water supply varies widely across countries and from one municipality to another. Water supply is continuous in Dakar (Senegal) and in Nyeri (Kenya). In Uganda and Zambia, water supply is, respectively, available on average about 22 and 15 hours per day. In Nigeria, the number of hours of service per day ranges between 4 in Abakaliki and 16 in Osogbo. The number of employees per thousand connections also varies widely, with extreme situations in Ghana and Nigeria.

67. Unaccounted for water is especially high in Sub-Saharan countries. In the extreme cases of Nigeria and Tanzania, up to 83 and 86 per cent of water is lost through leaks and thefts respectively. By contrast, Burkina Faso, Senegal and South Africa perform relatively well, with a level of unaccounted for water in line with high income economies.

68. Sustainability of financing to water systems is far from ensured in Ethiopia, Nigeria, South Africa and Zambia with operational revenues that cover less than or around 80 per cent of the operating costs. It is compounded, in the case of Nigeria, by a billing collection rate as low as 43 per cent. By contrast, Senegal and Uganda present cases where cost recovery (beyond operation and maintenance) is implemented and more than 90 per cent of water bills are collected (up to 98 per cent in Senegal), even though global poverty levels are high and affordability limited. These two countries therefore present very promising practices, where progress is anchored in sustainable financing. Interestingly, one is based on a public – corporatised and autonomous – company (Uganda) and the second one on an affermage contract with a private company (Senegal).

Water for business

Figure 3.2. Number of days per year that firms experience insufficient water supply for production



Source: World Bank Enterprise Surveys (2002-2006).

69. In addition to this performance gauge, useful indications of how the continuity of water supply impacts business is found in the World Bank Enterprise Surveys in the form of the average number of days per year that firms experience insufficient water supply for production. These

indicators remind us that water is not only a domestic issue, but also affects businesses with strong consequences for investment. As illustrated in Figure 3.2., firms working in Sub-Saharan Africa experience insufficient water supply for more than 10 per cent of the year on average, which compares to less than 4 per cent of the year in Latin America and South Asia. The contrast is even greater with Europe and Central Asia and East Asia, where the percentage is lower than 2. Disparities among countries are also important: in Tanzania, Mauritania and Kenya the number of days per year that firms experience insufficient water supply for production ranges from 85 to 104. By contrast, it is estimated at around 11 days per year in Burkina Faso and Senegal and around 5 in South Africa. Among the selected Asian countries for which information is available, Thailand, Indonesia and Cambodia provide a particularly good water environment for business with less or around 3 days of water failures per year. In Latin America, this indicator varies from virtually 0 in Chile and Brazil to 49 days in Mexico.

Future investment needs

Table 3.10. Investment needs in selected countries (US$ million/yr)

	Annual investment needs to reach the water-MDG	**Annual investment needs to reach the sanitation-MDG**
Burkina Faso (2006)	70 (rural); 18 (urban)	16.6 (rural); 11.65 (urban)
Ghana (2005)	46 (rural); 81 (urban)	25 (rural)
Kenya (2006)	63 (rural); 75 (urban)	34 (rural); 65 (urban)
Mauritania (2006)	14.6 (rural); 42.1 (urban)	1.9 (rural); 6.7 (urban)
Mozambique (2006)	36 (rural); 53 (urban)	3 (rural); 17 (urban)
Senegal (2004)	32.8 (rural); 24 (urban)	22 (rural); 45.7 (urban)
South Africa (2007)	219	253
Uganda (2006)	73 (rural); 20 (urban)	103 (rural); 49 (urban)
Zambia (2006)	17.2 (rural)	2.3 (rural)
Cambodia (2007)	70.7 (capital investments)	50.1 (capital investment)
India (2007)	4.400/year on 2007-2012, 5.250/year on 2013-15	N/A
Indonesia (2007)	450	N/A
Philippines (2007)	141,55	N/A
Argentina (2005)	80	141
Bolivia (2005)	16	17
Brazil (2005)	362	586
Chile (2005)	35	56
Colombia (2005)	80	86
Honduras (2005)	303	22
Mexico (2005)	227	227
Peru (2005)	39	44

Source: OECD Water at a Glance, based on various sources, including AfDB, EUWI, WSP and UNDP (2006), Asian Development Bank (2007) and Banco Mundial (2005). Revisión del Gasto Publico en Infraestructura.

70. Investment needs to reach MDGs are substantial for all countries under review. For reference, total investment needs to reach the MDGs in the 9 African countries of *Water at a Glance* are estimated at $884 million per year for water and at $655 million for sanitation. By comparison, Official Development Assistance for water and sanitation to these countries stood at $347 million in 2005.

Private Sector Participation: a recent history

71. To meet the tremendous financing needs and improve the efficiency of their water systems, many countries have sought the involvement of the private sector. In effect, public financing and management remain dominant in the countries under review – at the notable exception of Chile. Even so, most countries have had some experience involving the private sector, either through BOT for the development and management of treatment plants or through PPP arrangements for the management of water services.

Asia: a thriving but highly localised market

72. Private sector participation has existed in Asia's water sector since at least 1992, and has increased more significantly over the last decade. However, the extent of private sector participation across Asian countries varies widely. If India resorts mainly to BOTs and service contracts and is reluctant to shift more risks to the private sector, Philippines and Indonesia have both engaged in among the biggest concession contracts awarded in the water sector. Today, the impetus for big concessions in water networks has stalled. Private sector participation remains however dynamic but highly localized in China and BOT arrangements for water treatment facilities.

Table 3.11. Private sector participation in selected Asian countries

	Private operators	Year of introduction (large scale)	% of population served for drinking water		Contract
			Small Scale	Large Scale	
Bangladesh	Only small scale		14% (Dhaka)		
Cambodia	Widespread in secondary cities. 32 private water utilities.	1997	50% (Ky Cham)		Concession, DBO & DBL
China	Very strong activity in BOT for water and sewage treatment plants	1993		8%	BOT, TOT & Joint venture
India	Limited, but expanding				Service contract & BOT: Service contract in Chennai (1992/95). BOT in Tirupur (stressed), Panjim, New Delhi and Bombay, success and expansion of JUSCO (subsidiary of Tata Steel) in Jamshedpur
Indonesia	4 main private sector initiatives	1997	44% (Jakarta)[24]	5%	Concession, Joint venture & BOT: 2 Jakarta concessions, a private

[24] Total number of households: 1,660,000 and total number of households served by SPSPs: 1,280,000.

					operator in Batam and a joint venture in Bali.
Malaysia	Yes			64%	BOT & Concession
Nepal	Limited to small-scale		5-7% (Kathmandu)	3%	
Philippines	Yes	1997	30% (Manila)[25]	13%	Concession & DBO: 2 Manila concessions
Singapore	Yes (linked to PUB)	2002			BOT in desalinisation and NEWater
Thailand	Yes	1992	10% (Sawee)	2%	Concession & BOT
Vietnam	Yes	1996	19% (Ho Chi Minh)		BOT & BOO

Source: OECD Water at a Glance.

73. Private sector participation was formally introduced in Cambodia from 1997/1998. As of 2005, there were some 35 small-scale privately owned piped-water supply systems licensed through the Ministry of Industry, Mine and Energy in the urban water supply sector and some 12 public systems. In addition, empirical evidence suggests some 300 piped-water systems in rural Cambodia, mostly in the form of family businesses, operating in towns of less than 1000 households. The capital city is serviced by the government owned water supply utility, the Phnom Penh Water Supply Authority (PPWSA), which gained autonomy in 1986. The outstanding performance of PPWSA – in the area of non revenue water (from 72 percent to 6 percent), water supply coverage (100 percent of the inner city), and billing collection rates (100 percent) - constitutes one important success story in Asia.

74. China's private participation involvement in the water sector has grown significantly over the last 10 years. In 2006, the country reported a strong private sector activity in the water and sanitation sector, with two third of the new private participation in infrastructure contracts[26]. Private activities include mostly BOT for water and sewage treatment plants, and more recently, a growing trend towards municipal joint ventures, which combine municipal utility and the private corporation. Transfer-own-transfer (TOT) contracts, a variation of BOTs where the vendor sells an existing facility to an operator for a period of time, can also be primarily found in China.

75. Thailand incorporated private sector participation in 1992, when the government established East Water as a subsidiary of Provincial Waterworks Authority (PWA) and leased all water supply utilities to East Water for 30 years. Two years later, Thames International was awarded a 25 year concession contract to finance, build, and operate a water treatment facility at Pathum Thani. In 1997, East Water became the first water company in Asia to be listed on a stock exchange (51% held by private portfolio investors). In 1999, PWA extended its private sector involvement and awarded the first incentive-based leakage reduction contract to Thames International. Private participation was then extended to include BOT contracts in the suburbs of Bangkok.

76. Probably the best performing utility in Asia, Singapore's Public Utilities Board (PUB) is an autonomous public company that started engaging private firms in technological advancement programs, including NEWater and desalinization, in response to water scarcity concerns. In 2002, Singapore's Hyflux (70%) and Suez Ondeo (30%) gained a 20 year BOT contract to build Singapore's first desalination plant. NEWater, branded by Singapore, is a water treatment process that purifies wastewater using dual-membrane and ultraviolet technologies. The water is mostly utilized for commercial and industrial uses, but is safe to consume. By 2011, NEWater is expected to provide 15

[25] Total number of households: 1,600,000 and total number of households served by SPSPs: 625,000.
[26] See the World Bank PPI database: http://ppi.worldbank.org

percent of Singapore's water requirements. Four NEWater Factories were developed up to 2007. The fourth one, the Ulu Pandan NEWater Project, was developed by PUB as a DBOO (Design-Build-Own Operate) and involves the private sector in operating and maintaining the assets.

77. Private sector is widely involved in the water and sanitation sector of Malaysia. It participates in source development, water production and leakage repair. In 1994, sewerage utilities were privatized. The consortium, Indah Water Konsortium (IWK), operated and maintained sewage treatment plants. IWK has been a successful initiative, and extended its coverage to serve over 14 million people by 2001 (from less than 4 million in 1994). In 2005, Malaysia passed a law making water services a responsibility of both State and Federal government. An asset holding company, Pengurasan Aset Air Berhad, was established, as well as a regulator Suruhanjaya Perkhidmatan Air (SPAN).

78. In 1997, Manila in the Philippines awarded the largest water supply private sector contract at the time. The Metropolitan Waterworks and Sewerage System (MWSS) was divided into 2 concessions: Manila Water for the East Zone and Maynilad Water for the West Zone. With this deal, Maynilad inherited more debt, including foreign debt obligations, than Manila Water. It was consequently severely impacted by the 1997 Asian crisis, which compromised its ability to repay foreign debt and ultimately led to its contract cancellation in 2002. In December 2006, Maynilad was rebidded and DMCI-Metro Pacific Consortium, an all Filipino private consortium, won the right to continue operating the West Zone concession. Not burdened by similar debt obligations, Manila Water survived the crisis.

79. Following similar arrangements, private sector participation was introduced in Jakarta's water supply in the form of two concession contracts in 1997. PT Thames Pam Jaya was awarded the East Jakarta concession, and PALYJA the West Jakarta concession. Within 3 months, the economic crisis severely impacted the country, which limited both company's ability to meet their contractual obligations including tariff increases and capital investments.

Latin America: towards the development of a local market

80. Latin America has had a long history of private participation in the water sector, dating back to the late 19th century. However, after years of centralization in the mid 20th century, many countries began to decentralize water services in the 1980s and 1990s in part to make room for private sector participation. Today, Chile is the sectoral leader in terms of depth of contractual commitments, scope of private participation and industry performance. Argentina also began a large private investment program in the 1990s, but today many contracts have been cancelled or are unstable. By contrast, Brazil, Colombia and Mexico have committed to smaller-scale and local forms of private investment through municipal contracts. Finally, Peru, Bolivia and Honduras are countries with relatively less developed water infrastructure and late comers to private participation in the sector.

81. In most cases, constitutional or legal modifications have been necessary to allow private participation in what was traditionally considered to be a public patrimony and property. Mexico began this process by passing a National Water Law in 1992, Colombia passed a comprehensive sectoral policy in 1994 and Honduras passed a 2003 Water Framework Law and is in the process of adapting to new regulatory roles. In Chile, there are no restrictions on foreign ownership in water services, but in Mexico, private operators must be at least 51 per cent domestically owned. Both Peru and Honduras are currently in the process of establishing institutional frameworks for increased private participation.

Table 3.12. Private sector participation in selected Latin American countries (1990-2006)

	Investment Years	Contract Type	Current contracts	Terminated contracts	Sector & format	Key Examples
Argentina	1991 (Corrientes) 2000 (Catamarca)	Concession (18)	approx 11	6 cancelled 1 concluded	Mostly large scale. Provincial level. Utility (18)	Corrientes, Formosa, Tucuman, Santa Fe, Mendoza, Catamarca, Salta, Santiago del Estero; Buenos Aires Metropolitan area
Bolivia	1997; 1999	Concession (2)	0	2 cancelled	Limited Utility (2)	La Paz/El Alto and Cochabamba
Brazil	1994-2004	Concession (39); BOT (10)	approx 48	1 cancelled 2 concluded	Mostly small scale and local. Utility (41) Treatment plants (11)	In Rio de Janeiro state: Santo Antonio de Padua, Nova Friburgo and Guapimir. In Sao Paolo state: Serrana, Tambau and Mirassol
Chile	1993-2005	Concession (10); Divestiture (7)	19	1 cancelled	Mostly large scale, regional Utility (17) Treatment plants (3)	All 53 urban providers are privately operated or owned, serving majority of 15 federal regions.
Colombia	1994-2006	Concession (27); Management & Lease (22)	approx 45	3 cancelled	Mostly local Utility (45)	Concessions: Barranquilla, Barrancas, Tunja, Riochacha, San Marcos; M&L: Cartagena, Santa Maria; BOT treatment plant in Bogota
Honduras	2001	Concession (1) Management & Lease (1)	2	0	Limited Utility (1)	San Pedro Sula (concession); Aguas de Puerto Cortes (M&L, mixed capital)
Mexico	1993-2001; 2004 (treatment plants)	BOT (19), concessions (3), Management & Lease (2)	approx 27	4 cancelled 2 concluded	Limited and local contracts for utility (5) Numerous treatment plant (20);	Concessions: Aguascalientes, Cancun, Saltillo (mixed capital); M&L: D.F. and Puebla
Peru	2001, 2005	BOT, concession	2	0	Limited and local: BOT for treatment plant (1), concession (1)	Agua Azul in Lima, Chillo River Basin (BOT, treatment plant) and EMFAPA Tumbes (concession)

Source: OECD Water at a Glance**.**

82. Private investment in the selected Latin American countries has occurred in both water and sanitation network utilities as well as treatment plants. The predominantly favoured contractual arrangements have been concession, BOT (Build, Operate and Transfer) and its variants, and, in the case of Chile, divestiture. Colombia, and to a much lesser extent Mexico, have engaged in management and lease contracts, which confer the least amount of commercial risk to the private sector, transfer only management responsibility, but no capital investment and are typically shorter

term. BOTs are typically seen in Mexico and Brazil. Concessions abound in Argentina, Brazil, Chile, and Colombia. In the case of Chile, the country sold the majority of shares in the largest public water companies through divestiture arrangements between 1998 and 2001. After 2001, Chile began to transfer operation rights to the private sector through 30-year concessions. However, Chile did not transfer directly complete asset ownership, but adopted a step approach with EMOS contracting out several activities before divestiture. This allowed the development of a better understanding of the implications of involving the private sector and the building of mutual confidence.

83. While high profile cancellations have occurred in Cochabamba and El/Alto, Bolivia and in Tucuman and Buenos Aires, Argentina, the majority of contracts across the region remain active. The high profile cancellations have however had two main consequences. They have contributed to slow foreign investment in water and sanitation in the region, in stark contrast to investment trends through the 1990s. They have also brought to light some of the tensions that the water and sanitation has had to face in recent years, in particular the strong impact of currency crisis and the difficult trade-offs underpinning tariffs setting. In the province of Tucuman, Argentina, conflict arose in 1995 when the concessionaire increased water tariffs by 106 per cent[27], igniting a province-wide campaign led by consumers to withhold water tariff payment. By 1998, the international company pulled out of the province.

84. Contracts in Aguascalientes and Cancun in Mexico, and throughout Argentina were shaken by severe national economic crises in 1995 and 2001, respectively. These crises sparked currency devaluations in each country, increasing the costs of water utility operations and decreasing consumer's ability to pay their water tariffs. Under these conditions, politicians were hesitant to permit tariff increases, and water operators were left with unserviceable debt. In the case of the Aguascalientes and Cancun concessions, the Mexican national bank, Banobras, aided the private concessionaires with their debt. In the case of Buenos Aires, after a presidential transfer of power, the private concession was cancelled and replaced with a public operator in 2006.

85. In the more extreme cases of Cochabamba and El Alto/La Paz, Bolivia, contracts were ended prematurely in 2000 and 2006, respectively. Resistance to the contracts emerged when the government passed Law 2030, which to some seemed to give monopoly power over water resources to the company. In order to begin recouping massive initial investments, the private operator, *Aguas de Tunari*, imposed a 35 per cent water tariff increase before the beginning of the concession, leading consumers to pay 35 per cent more for the same poor quality service[28]. Organized resistance eventually led to massive protests, a general strike, and wounded civilians and police officers in 2000 and 2005. After the ensuing cancellations, public and political will turned against involving private water operators, in particular international companies.

86. While few new water utility contracts with international investment are currently being signed in the region, private domestic investment continues in many countries. In Colombia, many new deals involve public - private partnerships (e.g. in Cartagena) which have been adapted to the local culture and context. Colombia's innovative approach includes contracting small local entrepreneurs, opting for contracts jointly controlled by the municipality, international and private local shareholders and involving cross-subsidy programs for the poor. In Chile, 57 per cent of private participation is owned by domestic capital in companies such as CORFO, Grupo Luksic and Grupo

[27] Crenzel (2003). From the promise of service universalisation to the universalisation of protest: the privatisation of water and sanitation services in Tucumán, Argentina.
[28] Laurie and Crespo (2003). Strategic Country Report: Bolivia.

Solari[29]. In Mexico, the Cancun concession is in majority owned by domestic construction and infrastructure company Grupo Mexicano de Desarrollo.

87. Another promising trend is constituted by the various developing private/public arrangements such as those found in Saltillo, Mexico and Agua de Puerto Cortes, Honduras. In these "mixed concession" arrangements, the private company shares commercial risk and ownership for the life of the concession with a public company. For example, in 2001, the town council of Saltillo approved the joining of the municipality of Saltillo with a private company, Aguas de Barcelona (AGBAR), who bought 49 per cent of shares in the newly formed mixed capital company, SIMAS. In essence, the municipality maintained majority ownership and control of the resource, but administration and execution of projects were delegated to the private sector. Such arrangements may help generate necessary capital investment while diffusing commercial and political risk between private companies and governments.

88. The contractual arrangements adopted in Salta, Argentina, is another such example of a balanced risk sharing between the public and private sector. In this contract, the province financed some of the infrastructure through public grants, recognising the difficulty of providing all necessary infrastructure updates and maintenance through tariff revenue. The contract was considered successful thanks to good coordination across government levels and ministries, practical measures to extend service to the poor and a flexible contract[30]. The concession also survived a severe economic crisis in 2001, corroborating that domestic companies may be more flexible when economic crisis hit, because they typically generate less short-term debt from international lenders than their multi-national counterparts. Domestic companies may also have greater incentives to work closely with the community, building working alliances with local agencies that will provide greater coordination, flexibility and contractual patience during times of economic instability[31].

89. SABESP, a NYSE listed joint venture for Sao Paulo's water utility in Brazil, constitutes another innovative contractual arrangement. A publicly owned and corporatized company, SABESP is known to be one of the most financially healthy operators in the region, perhaps in part because it taps into the capital market directly and borrows from commercial banks. Distributing risk among various public and private actors, as well as domestic and international, may contribute to more sustainable contractual arrangements, in particular during periods of hyperinflation, commodity busts and economic crises.

Africa: thriving small-scale and contrasted experience with the international private sector

Table 3.13. Private sector participation in selected African countries

	Private operators	Year of introduction (large scale)	% of population served for drinking water		Contract	Status
			Small Scale	Large Scale		
Burkina Faso	Limited	2001 & 2002	33% (Bobo Diolasso), 49% (Ouagadougou)		Service contract & BOT	5-year service contract with ONEA extended for 2 more years
Ghana	Thriving small-scale	1998 in 2 small towns	32% (Kumasi)		5-year Management	

[29] SISS, 2007
[30] Saltiel et Maywah (2007). Argentina: The Salta Public-Private Partnership.
[31] Post (2008). Liquid Assets and Fluid Contracts: Explaining the Uneven Effects of Water Privatization.

	operators and international (state-owned) operators in Accra	2006 in Accra			contracts. Accra: Rand Water & Vitens	
Kenya	Limited	1995 (Malindi) & 1999 (Malindi & Nairobi)	60% (Nairobi)		Service and management contracts	Billing and revenue contract for Nairobi suspended in 2001.
Mali	Limited to small-scale	2000 (EDM: Electricité du Mali)	63% (Bamako), 69% (Kayes)		Management contract, 20 year concession	Concession terminated early in 2005
Mauritania	Some 365 small-scale operators in small towns	Since 1993	51% (Nouakchott)		Management contracts in small towns (for water only)	Thriving
Mozambique	Yes: Maputo and 4 secondary cities	1999 in Maputo & Matola. 4 smaller cities Beira,Quelimane, Nampula, Pemba	30%	Total 13%. 33% (Maputo), 22% (Beira), 9%(Quelimane) 20%(Nampula) 45% (Pemba)	15-year Lease & 8-year management contracts	
Senegal	Yes	1996	21% (Dakar)	34%	10 year affermage for operating water services	Extended for a further 5 years in 2006
South Africa	Limited but past experience	1992 (Mbombela) 1999 (KwaDukuza) 2001 (Johannesburg) 2002 (Lukhanji)		0,5%	25 yr O&M (Lukhanji) 30 yr concession (KwaDukuza), 30 yr concession (Mbombela), management contract (Johannesburg)	Management contract in Nkonkobe (cancelled). Nelspruit concession (stressed). Management contract for Johannesburg (completed in 2006)
Tanzania	No large scale after termination	2003 (Dar es Salaam and Bagamoyo)	56% (Dar es Salam)		10 year Lease contract for water supply	Lease collapsed in 2005
Uganda	Limited to small-scale after management contracts termination	1998 & 2002 (Kampala)	30% (Kampala)		Management contracts APWO: association of small-scale operators	Management contract terminated in 2004 & not renewed
Zambia	Limited to small towns	From 2001	No small-scale		Management contracts	

	and big users					

Source: OECD Water at a Glance**.**

90. The first involvement of an international water provider in Sub-Saharan Africa took place in Côte d'Ivoire in 1960, (renewed in 1987). Guinea followed in 1989 with a ten year lease. The two experiences were relatively successful and led Senegal to adopt an innovative affermage contract. To date the Senegal 10-year-contract remains a success and was further extended in 2006. By contrast, agreements in Gambia and Uganda were not as successful. The Gambian lease contract was terminated after two years of operations in 1995 and the Ugandan management contract was brought to an early termination in 2004. Other contracts were terminated early in the Central African Republic (Bangui), Kenya (Nairobi), Mali, South Africa (Nkonkobe) and Tanzania (Dar es Salaam). In total, since 1990, some 16 countries in Sub-Saharan Africa have sought to involve the private sector in the development of their water infrastructure.

91. A wide range of contracts have been awarded in Africa: service contract, management contract, affermage, lease, concession and BOT. Nevertheless, contrary to the trends in Latin America and in Asia, where the concession model has been in the past the main vector for private sector involvement, only two concession contracts have been signed so far in Africa, one of which was terminated early. BOT, shorter term contracts and lower-risk contracts (management/lease) are more common than elsewhere, reflecting the perception of high risk.

92. The success of the affermage contract in Senegal is due to an appropriate institutional framework, suitable incentives and the major role of the government, which has inspired confidence in its partners. The private firm Sénégalaise des Eaux (SDE), owned by the French group SAUR, has an incentive to upgrade the supply network as greater revenue derives from increased water consumption. The stakeholders have also established a good dialogue, with contracts reviewed every six months by a committee that monitors SDE's performance. The review is based on 18 criteria spelled out in the contract between SDE and its public counterpart, the Société Nationale des Eaux du Sénégal (Sones), which is responsible for investment plans and supervision of them. Achievement of each of the main targets is rewarded and failure incurs fines. This system has made SDE more efficient and the firm increased its customers by 69 per cent between 1996 and 2005, had a volume production/sale ratio of 80.5 per cent (68.2 in 1996), network efficiency of 80 per cent (the target is 85 per cent) and has had balanced accounts since 2003. The government has played a strong regulatory and coordination role and has kept its promises, notably by paying its own bills (making for SDE's 98.3 per cent bill collection rate). The necessary rate increases provided for in the SDE-Sones contract have also been made.

93. Another successful example of private sector participation on the continent can be found in Namibia, where the private sector has been involved in the development of innovative technology for water provision. Windhoek was one of the first cities in the world to introduce direct recycling of effluent for drinking purposes. In order to attract technical and operating know-how, the City of Windhoek signed a performance-based operation and maintenance contract with Windhoek Goreangab Operating Company (WINGOC: VeoliaWater, Berlinwasser International and WABAG) in 2002 for 20 years. Extensive water-quality monitoring programmes are in place to ensure the required level of water quality after each treatment process, as well as the quality of the water finally supplied to the City of Windhoek.

94. However, private sector participation in water infrastructure cannot be reduced to contracts with international operators. Local private participation plays an increasingly important role in Sub-Saharan Africa. Mauritania, for instance, pioneered the delegation of water service delivery in small cities in the early 1990's. As a consequence, some 365 municipalities below 20,000 inhabitants are

today delegating the management of the provision of water services to independent private providers. In 2000, the Association Nationale de l'Eau Potable et de l'Assainissement (ANEPA) was established as the authority responsible for delegating the contracts. Today it manages some 90 per cent of these management contracts. The system is working well and small businesses thrive in small municipalities, despite some shortcomings, notably in the institutional framework: ANEPA is de facto both the contractor and the regulator, which is a source of some obvious conflicts of interest.

95. In a context where the progress of conventional public service provision has barely kept pace with rapid population growth and migration to urban areas, a wealth of small-scale local actors, including some informal ones, have also made up for the deficiencies in public service provision and have sometimes ended up accounting for most of water and sanitation service delivery. Their strong development also reflects their flexibility and their adaption to the diversity of demand. In Ghana, several independent operators manage small piped networks. In Mali, 25 independent suppliers operate water networks in Bamako. In Mozambique, about 200 independent providers operate small networks in Maputo and Matola. The activities of formal and informal small-scale private sector enterprises in the water service sector are also driving innovative institutional settings. In Uganda, 13 local private operators provide services under short-term management contracts. The small-scale operators have established in 2003 an association (APWO-Ug) to support the development of capacities and good practices in the network.

Institutional and regulatory frameworks

96. The OECD regional consultation has shown it: an effective institutional environment with clearly defined roles and responsibilities is critical for successful private sector involvement in water infrastructure development. A sustainable institutional framework, regardless of the ownership of operators, should encompass government support and enforceable policies, political will, transparency, regulation, and accountability throughout the structure. As of today, however, most countries still struggle with separating roles and responsibilities, consequently impeding the development of an effective institutional framework.

Regulatory framework

97. For over a decade, most countries in Africa, Asia and Latin America have been developing regulation to address issues related to tariffs, monitoring, enforcement, operations and maintenance, and customer service levels. Their very diverse experiences, as reflected in *Water at a Glance*, support the importance of building on country contexts and on the support of multiple stakeholders to develop a proper regulatory framework. Adopting a progressive approach has also proved help the building of necessary institutional and human resource capacities.

Asia: the limited development of separate regulatory agencies

98. Most of the selected Asian countries are involved in some form of regulation, however successful implementation is limited. In Cambodia, weak regulation limits the progress of well written policies that could potentially benefit the water sector. Manila relies on an independent regulator, but regulation has been constrained by political influence, limited autonomy and overlapping of regulatory functions across different public bodies. In Singapore, an independent regulator does not exist, but in 2001, the Public Utilities Board (PUB), an autonomous entity, gained responsibility for the water and sanitation sector. PUB created and successfully implemented an all encompassing strategy and institutional framework which included management of consumer demand and utility supply, tariffs, customer service, staff satisfaction and regulation. Thailand is involved in private sector participation and has already achieved their water and sanitation MDGs, but regulation originates from ministries.

Table 3.14. Regulatory frameworks in selected Asian countries

	Regulatory Agency	Activities	Independence	Creation
Bangladesh	No			
Cambodia	No. Sectoral responsibility for piped water supply in urban areas is with the Ministry of Industry, Mines and Energy while the Ministry of Rural Development handles rural areas and point sources.			
China	No			
India	No, but creating a regulatory agency has been discussed			
Indonesia	Yes. The Jakarta Water Supply Regulatory Body. Oversees implementation of the 2 concession contracts for Jakarta. www.jakartawater.org	Issue regulatory instruments. Protect consumers' interest through key performance indicators and Water Voice (satisfaction survey, forum meeting, press coverage, information system). Implement automatic tariff adjustment. Supervise the concession agreement to ensure fulfilment of obligations by both Parties. Facilitation and mediation for sustainable cooperation and dispute settlement.	Yes, but limited power	Commenced operation in 2001
Malaysia	Yes, the National Water Services Commission (Suruhanjaya Perkhidmatan Air Negara - SPAN). www.span.gov.my	Implement national policy with regard to water supply and sewerage services. Monitor operators' compliance with laws, standards and contracts. Advise Minister on tariffs. Ensure efficiency, long-term sustainability of sector and achievement of development goals.		2007
Nepal	No effective regulatory system. The government has statutory power to safeguard consumer interests but enforcement has been ineffective because the government is also the service provider.			
Philippines	Yes, MWSS-RO. There is also a regulatory agency for other water supply providers but no budget, manpower to enforce the law. www.mwssro.org.ph	Economic regulation of Metro Manila's water, based on the concession agreement: annual tariff adjustment for inflation, extraordinary price adjustment, and rate negotiation (every 5 years). Monitor operations and customer service performance.	Yes, but proliferation of functions across agencies and political interferences.	1997, by virtue of the concession contracts for Manila
Singapore	Strong regulatory framework but effectively self regulation.			
Thailand	No			
Vietnam	No. Ministries act as sector regulators.			

Source: OECD Water at a Glance.

Latin America: federal vs. State / province regulation

99. Many Latin American countries established regulatory frameworks in the early 1990s to oversee the private participation arrangements emerging at the time. In these countries, the water and

sanitation sector typically contains two forms of institutional oversight: 1) sector wide policy making and monitoring (e.g. through a federal water commission or board, water law, Minister of Environment) and 2) economic regulation of service provision (e.g. through a federal regulatory agency, state or municipal regulatory agencies). These two functions may be contained in the same agency, or may be spread across various institutions within a country. Typically private operators are monitored through a regulatory authority which applies rules and regulations that are set either by the same regulatory authority or a hydraulic policy making authority.

Table 3.15. Regulatory frameworks in selected Latin American countries

	Presence of Regulatory Agency	**Activities**	**Independence**	**Date of Creation**
Argentina	No national-level services regulatory agency. Provincial level regulation: 14 out of 23 provinces have regulatory bodies.	No coherent national regulatory policy. Each province determines level of monitoring, fiscal tariffs setting, and regulatory responsibilities. Usual activities: monitor compliance, water quality, oversees tariff setting, expansion of services, investment, environmental and consumer protection.	No. Weak autonomy vis a vis political power and regulated company.	AOSC, 1991 (Corrientes) ETOSS, 1992 (Buenos Aires) ENRESS, 1995 (Santa Fe) EPAS, 1993 (Mendoza)
Bolivia	Superintendencia de Saneamiento Básico (SISAB) www.sisab.gov.bo	Awards/renews concessions & licenses, monitors service provision, reviews and approves tariffs, mediates users and providers complaints. Ensures compliance with standards and laws.	Yes, but volatile political situation	1999
Brazil	No national-level services regulatory agency, at State or municipal level. Brazilian National Water Agency (ANA) sets and enforces hydraulic policy. www.ana.gov.br	No "regulatory culture", operators are often their own regulators. 14 Brazilian states have established regulatory (multi-sector) agencies for public services that also cover water and sanitation. ANA responsible for enforcing environmental hydraulic policy and demand quota rules.	Political interference. States have weak and limited regulatory practices	ANA (2000)
Chile	Superintendencia de Servicios Sanitarios (SISS) regulates service providers www.siss.cl	SISS monitors compliance, imposes sanctions, solicits reports, account auditing, tariff setting, controls disposal of liquid industrial effluents The Ministry of Health sets and monitors drinking water quality standards in urban and rural areas	Yes	1990
Colombia	SSPD regulates water service providers; the Water Regulatory Commission (CRA) sets sector policy www.superservicios.g	SSPD supports external auditors who monitor service provision such as quality, infrastructure maintenance, tariff setting. Monitors cross-subsidies. CRA promotes competition among service providers, controls monopolies,	No	1991

	Presence of Regulatory Agency	Activities	Independence	Date of Creation
	ov.co	defines tariff-setting rules, but does not monitor application of these rules.		
Honduras	Ente Regulador de los Servicios de Agua Potable y Saneamiento (ERSAPS). www.ersaps.gob.hn	Water quality monitoring, equity based service provision, monitors water user rights, promotes self sufficiency policy for operators, civic participation and sustainable development.	No	2003
Mexico	No economic regulation by federal government. Limited regulation at state level. CONAGUA enforces National Water Law and promotes sectoral policy. www.cna.gob.mx	CONAGUA is responsible for user rights permit distribution, hydraulic infrastructure planning and construction, promotion of private participation. It compiles water statistics and operators' performance based on self-reporting.	No	Local authorities started establishing regulators around 1992 CONAGUA (1989)
Peru	The National Sanitation Services Superintendent (SUNASS). www.sunass.gob.pe	SUNASS sets and approves tariffs at the request of the utilities (different providers have different tariffs), establishes norms, regulates compliance with sectoral law, resolves competing user controversies, handles consumer complaints.	Yes, but fragile	1992

Source: OECD Water at a Glance.

100. Chile, Colombia, Bolivia, Peru and Honduras have established a federal regulatory authority charged with reviewing and approving tariffs, monitoring and enforcing standards of performance, awarding concessions, and to a varying degree, imposing sanctions for non-compliance by operators. By contrast, the institutional framework in Argentina and Brazil relegate regulation of services to the state/provincial or municipal level. Because of limited administrative, technical and financial resources at the local level, regulation is often fragile and, in many cases, absent.

101. The sole act of establishing a regulatory agency did not always help to clarify institutional responsibilities. Although a federal regulatory agency was established with a clearly demarcated role in economic regulation in Honduras, Bolivia and Peru, political upheaval and administrative inexperience constrain the effectiveness of the institutional arrangement. Furthermore, in Honduras, the legal and regulatory framework consists of twenty legal instruments that mandate separate but overlapping roles to many hydraulic agencies. In some regions in Brazil, Mexico and Argentina, the regulatory agency is also the service provider, creating a conflict of interest for regulators.

102. Although independent regulation is sometimes compromised in countries under study, several countries have made great strides to strengthen the institutional framework governing water infrastructure. In Chile, independent arbitration resolves conflicts between users. In Colombia, the SSPD commissions' studies on consumer satisfaction with water services, track increased progress over time and earmarks problem areas. In Mexico, where regulation at the local level is limited, CONAGUA centralizes, tracks and publishes national data on service performance, tariffs, water

access and hydraulic works. In Honduras and Peru, experiences with regulatory agencies are relatively recent, but political will has helped to create initial frameworks and important advances have been made as water policy becomes an increasing concern for governments.

Africa and the challenge of regulating small-scale, decentralised activities

103. Over the last 10 years, most African countries have also engaged substantially in setting up regulatory frameworks and regulatory agencies, with a role to examine and approve tariffs, monitor and enforce standards of performance and receive and investigate user's complaints. Among the 13 African countries under review, 7 have established regulatory agencies, among which 5 very recently (since 2000). Most of the newly developed regulatory agencies have been given legal and financial autonomy. However, their independence remains fragile because of important political interference. The remaining 6 countries regulate the sector and private sector involvement either by way of contract, or directly by the relevant Ministry.

104. Here again, situations and performance vary widely across countries. One of the most successful examples of private sector participation in water, the affermage contract in Senegal, is strictly regulated by contract. Senegal manages to achieve proper delineation of responsibilities through an appropriate design of contract and clear allocation of responsibilities across the three actors involved: 1) the State in charge of defining the sector policy, of the IWRM, the legal framework and approving tariffs, 2) SONES (Société nationale des Eaux du sénégal), the State company in charge of asset management (existing and new), securing financial resources, public awareness and control O&M quality and efficiency; and 3) SDE (Sénégalaise des Eaux), the private company in charge of operations and maintenance (with some obligations for asset renewal), for billing and revenue collection and for customer management. Appropriate risk allocation and monitoring mechanisms embedded in the contract have also been important elements of success.

105. One of the biggest challenges faced by the regulatory bodies in Africa is the development of a comprehensive framework that recognizes and oversees the different forms of provision, including the increasingly recognized small-scale providers, in a context of low network connection levels. Many regulatory bodies were indeed established with the objective to oversee the activities of a monopolistic provider with in certain instances an exclusivity clause for its service area. Including the multitude of small-scale providers in the regulatory framework would require some strong political will to acknowledge their activities (with the risk of threatening the monopoly power in place and challenging past agreements) and then the resources and capacity to oversee such a disperse sector. There is a case for limiting the monopoly power in certain areas – typically in peri-urban areas and where the network is not yet in place – to allow for smaller operators who might have a better knowledge of the users and of hydrological constraints to compete for the development of water systems and provision of services. This strategy was adopted in Kenya to foster the development of water connections in the slums around Nairobi. The government of Mozambique, supported by the Water Regulatory Council, is also developing such an approach, having for the first time recognized the role of small-scale providers in their recent water law.

Table 3.16. Regulatory frameworks in selected African countries

	Presence of regulatory agency	Activities	Independence of the regulatory agency	Date of creation
Burkina Faso	No			
Ethiopia	No			
Ghana	Multi-sector utility regulator (Public utilities Regulatory Commission, PURC). It operates along the State Enterprise Commission (SEC), responsible for regulating the national water company (GWCL) through performance contracts. www.purc.com.gh	Provides guidelines for setting water rates, examines and approves. Monitors and enforces standards of performance. Receives, investigates complaints and settles disputes between consumers and utilities. Monitors quality standards.	Yes	PURC: 1997, SEC: 1989.
Kenya	The Water Services Regulatory Board (WSRB).	Oversees water services provision and licenses 7 Water Service Boards in charge of contracting and supervising water providers	Yes, but fragile.	Created in 2002, operational in 2004.
Mali	Commission de Regulation de l'Eau et de l'Energie (CREE)	Promotes and organises competition in the sector. Sets tariffs.	Legal constituted body and financial independence	2000
Mauritania	Autorité de Régulation Multisectorielle (ARE) and Agence Nationale d'Eau Potable et d'Assainissement (ANEPA) for regulation of contracts with small water suppliers. www.are.mr	ANEPA both delegates and regulates	Yes for Autorité de Régulation Multisectorielle. Conflict of interest for ANEPA	2001
Mozambique	Water Regulatory Council (CRA), responsible for regulation of water systems under delegated management. www.cra.org.mz	Regulates only the areas under private management. Price regulation. Consumer protection. Mediation and conciliation of interest.	Yes	1998
Nigeria	Not yet, states and local governments are responsible for provision of water services, while the federal government has jurisdiction over shared water resources. No independent regulation of water service delivery. However, creation of a National Water Commission, an independent regulator for water supply and water resources management, is envisaged.			
Senegal	No. Regulation by contract.			
South Africa	No, regulatory functions undertaken by the Department of Water Affairs and Forestry.			

Tanzania	Energy and Water Utilities Regulatory Authorities (EWURA) www.ewura.com	Reviewing and setting rates and charges. Benchmarking standards. Procurements for major projects. Health, safety and environmental issues.	Yes	2001
Uganda	No, regulation through performance contracts with the public utility.			
Zambia	National Water Supply and Sanitation Council (NWASCO) www.nwasco.org.zm	Advises government & local authorities. Licenses providers. Establishes and enforces standards. Monitors performance of providers. Disseminates information to consumers.	Yes	Created in 1997. Started operations in 2001.

Source: OECD Water at a Glance.

Benchmarking, Competition, and Corporatisation

106. Corporatization and development of benchmarking processes have been used by most countries to increase economic and utility efficiency as well as support greater transparency and accountability in the sector. Different models of benchmarking exist, from systematic reporting and cross-utility comparison on key performance indicators to performance-based contractual arrangements. In Chile, reference points are given by a model company. In Senegal, performance is assessed against previously agreed benchmarks. In Manila and Jakarta, the water sector contracts were segmented into East and West Zones and therefore provide opportunities for direct comparison of performance. The benchmarking culture is growing in most countries, although, in many cases, weak regulation and institutional arrangements may limit its effectiveness.

107. In Singapore, PUB incorporates benchmarking throughout its water sector. In Indonesia, PERPAMSI[32], the Indonesian Water Supply Association, reports on 29 indicators directly through internet. In 2007, the government of India began transitioning towards a benchmarking culture when the India's Ministry of Urban Development joined the Asian Development Bank in publishing a benchmarking report on service levels in urban water supply operations[33]. This, however, fell short of a benchmarking objective, having been developed as a one-off exercise. On a different scale, the Southeast Asian Water Utilities Network and the Asian Development Bank evaluated 40 water utilities in urban areas of Southeast Asia and published a databook as component of their benchmarking program (the performance indicators included coverage, non revenue water, tariffs, and operating ratios)[34].

108. In Brazil, the Sistema Nacional de Informacoes (SNIS) database[35] successfully incorporates benchmarking within its water sector. SNIS compares performance and service levels across utilities for a large audience, including local populations, government, and media. Eventually, the tool began to assist the Federal government in prioritizing water sector investments.

[32] www.perpamsi.org/index_eng.htm
[33] www.indiawaterportal.org/data/datastats/2007-Indian-Water-Utilities-Data-Book.pdf
[34] www.adb.org/Water/SEAWUN/SEAWUN-Benchmarking.asp
[35] www.snis.gov.br

Table 3.17. Corporatisation of local operators in selected countries

Bangladesh	No, water supply services are organized as municipal departments (pourashavas) and not as legally separated entities. Revenues and expenses fall within its overall budget.
Cambodia	PPWSA is a self-sustaining public corporation.
China	Water Utilities Companies were converted from government bureaus to independent public institutions or publicly-owned share companies, following efforts to convert them into corporations in the last few years. Each WUC is a state-owned enterprise, a privately-owned enterprise, or a limited company.
India	Yes; at least 15 municipal corporations.
Indonesia	Yes, 316 municipal water utilities: Perusahaan Daerah Air Minum (PDAM), Government-owned regional water supply companies (Perusahaan Daerah Air Minum or PDAMs) provide the majority of water services. They are small and their service areas are limited by the geographical boundary of the regional governments.
Malaysia	Penang Water Board (PBA) in 2001. Selangor Water Management Corporation Ltd. (SWMC) in Kuala Lumpur in 2002. Johor Water Company (JWC) in 1987.
Nepal	Nepal Water Supply Corporation (NWSC) is a semi-autonomous corporation with limited independence.
Philippines	The Philippines created public corporations in the form of water districts for all primary and secondary cities/municipalities as early as 1974. There are 500 water districts nationwide under the supervision of the Local Water Utilities Administration.
Singapore	Yes, PUB is autonomous
Thailand	The 141 municipalities own and operate independent water supply systems in urban areas under the supervision of the Public Works Department. In 1967, MWA was established as a state enterprise which combined four separate utilities in Bangkok with a full range of authority.
Argentina	Yes, there are some 50 major city water and waste companies and at least 150 companies in small towns.
Bolivia	Yes
Brazil	Yes for some water utilities companies, others are established as Municipal Autarky.
Chile	Yes
Colombia	Yes, municipalities are public stock corporations, which allow for private participation without further change in legal status.
Honduras	Yes, Aguas de Choluteca and Servicios Municipales de Catacamas both owned and operated by their municipalities

Mexico	Yes
Peru	Yes - Empresas Prestadoras de Servicios
Burkina Faso	Yes, one national operator ONEA, a limited liability company with legal autonomy.
Ethiopia	Yes, the Addis Ababa Water and Sewerage Authority was established as an autonomous body in 1971.
Ghana	Yes, the Ghana Water Company Limited (GWCL) established in 1999.
Kenya	Yes, but lack of real independence.
Nigeria	Yes, but lack of real independence.
Senegal	Creation of an asset holding company, the Société Nationale des Eaux du Sénégal in 1995.
South Africa	Yes
Tanzania	Under the Water Works Order of 1998, 19 Urban Water and Sewerage Authorities were established as autonomous bodies.
Uganda	Yes
Zambia	Yes, establishment of 10 commercial utilities in 2000.

Source: OECD Water at a Glance.

109. Corporatisation, through higher independence from political processes and greater possibility for benchmarking, may contribute to increasing economic and utility efficiency as well as positively impact transparency and accountability. Most countries under review have been involved in some form of local corporatization – with few exceptions, such as Bangladesh -, although to varying degrees. PUB in Singapore, for instance, is largely more autonomous than its Asian counterparts. The legal act of corporatization alone is, however, hardly sufficient to ensure separation of regulation and operations on the ground and while Latin American operators are generally corporatised, the functions of operation and regulation are not always separated, creating a conflict of interest in both provision and regulation. Similarly, if in most African countries under review, local operators have been corporatised, many, notably in Kenya, Nigeria and Tanzania, are still characterised by limited independence.