



NEPAD-OECD AFRICA INVESTMENT INITIATIVE ROUNDTABLE

Stocktaking of the water and sanitation sector and private sector involvement in selected African countries

By

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Over the last ten years, the issue of private sector participation in water infrastructure has led to highly politicized discussions. This background note aims to respond to the growing need for a dispassionate approach by providing a stocktaking of water and sanitation sector development and private sector participation in a selection of 16 Sub-Saharan African countries. It is part of a wider project carried out by the OECD on *Sustainable financing to ensure affordable access to water and sanitation*, which includes the development of practical guidance for governments wishing to engage the private sector in the development and management of water and sanitation infrastructure, based on the newly released *OECD Principles for Private Sector Participation in Infrastructure*. The information presented in this background note is drawn from a new evidence base that combines information on some 7 key dimensions of water and sanitation (covering some 90 indicators) for some 35 countries in Africa, Latin America and Asia-Pacific (Annex A provides the detailed list of indicators and countries).

The context: resource abundance and low access

Sub-Saharan Africa (SSA) 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 access targets of 75 per cent and 66 per cent by 2015 for drinking water and sanitation respectively set by the MDGs. In particular, SSA 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. The situation of sanitation is far more dramatic than water, which 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.

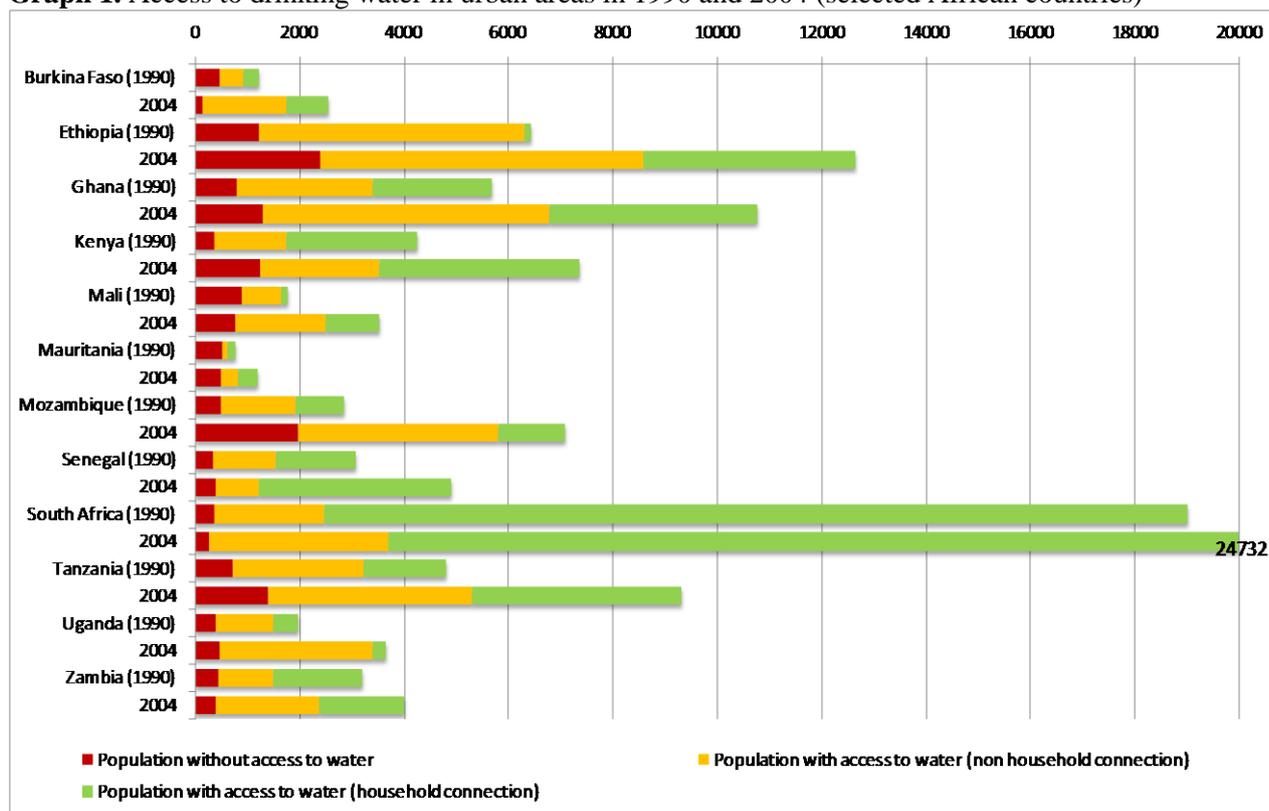
Most importantly, and despite the progress, the dynamics appear highly unfavourable. In contrast to other developing regions, SSA continues to see a substantial increase in the absolute number of unserved people. Some 60 million between 1990 and 2004 joined the pool of people without safe access to drinking water and a further estimated 47 million people are expected by 2015. On average, some 10 million people have been provided with improved water sources annually over the 1990-2004 period. This number would, however, need to reach some 30 million people if SSA were to reach the

water target of the MDGs by 2015. Similarly, the perspective is of a further increase of 91 million people without access to sanitation services by 2015. If SSA were to reach the sanitation target of the MDGs, some additional 35 million people should be provided access to improved sanitation annually, which dramatically contrasts with the current trend of 7 million. And in any case, even if the MDGs are reached by 2015, the backlog of unserved people will remain substantial. It is estimated by the Joint Monitoring Programme at some 234 million people without access to drinking water and 317 million without access to sanitation.

Conditions largely differ between people living in major cities, in small towns, in peri-urban areas or in rural areas. Globally, water coverage in rural areas still lags far behind, compared with urban areas, forcing women and children to travel long distances. Similarly, rural sanitation coverage is half the urban coverage, i.e. quasi absent in most areas. Furthermore, in cities and peri-urban areas infrastructure is under great stress because of the combined pressure of population growth and migration from rural areas to cities. And the negative consequences of improper sanitation are much more acute in slums, where overstretched poor infrastructure is compounded by a high population density. Between 1990 and 2004, some 62 million people gained access to water supply in rural areas of SSA (corresponding to a 6 per cent coverage increase). By contrast, high migration from rural to urban areas, combined with demographic pressure led to a 2 per cent decrease in coverage in cities. As a result, Nigeria and Mozambique for instance even saw their urban water coverage decline by over 10 percentage points between 1990 and 2004.

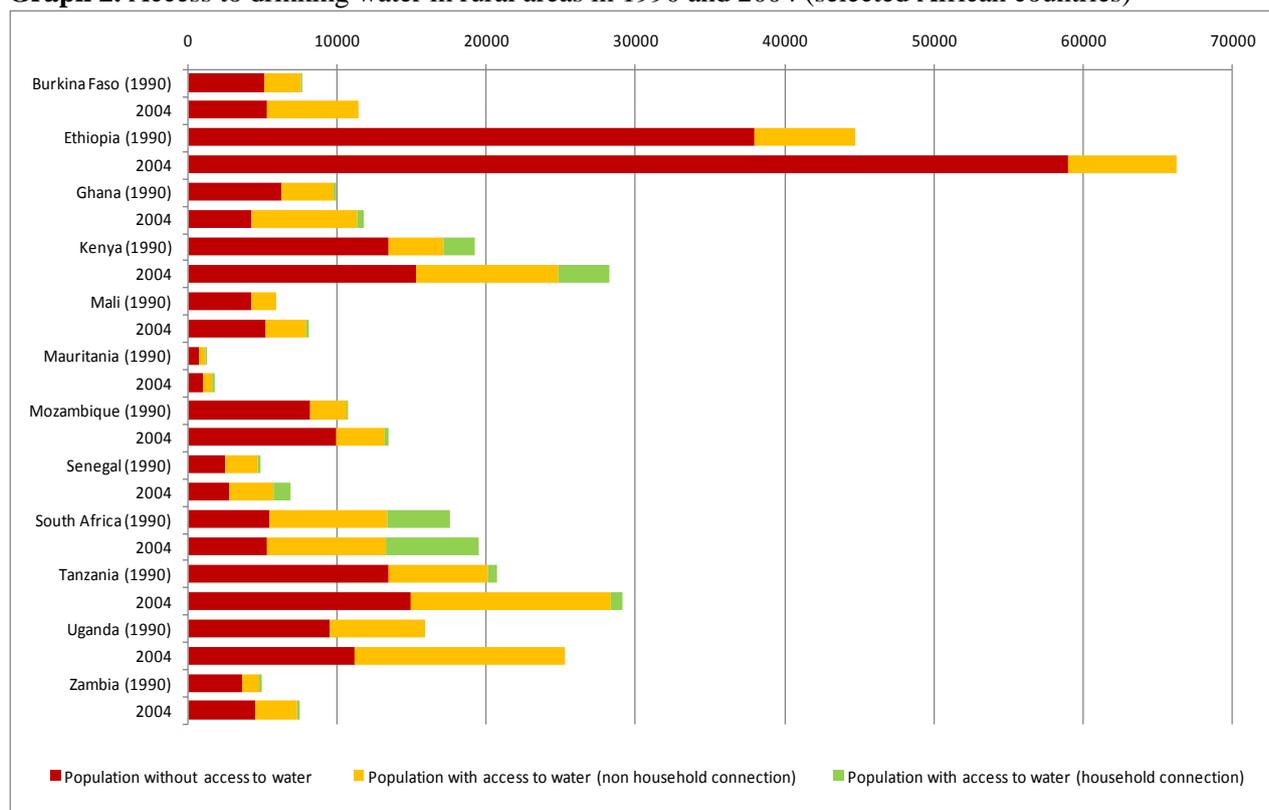
A word of caution is needed here regarding the quality of data and especially of time series. A change in the monitoring methods in one country and heterogeneity across countries methodology may considerably alter the reliability of data and make difficult comparisons over time and across countries. However, without trusting too much the absolute levels, the evidence clearly highlights the heterogeneity of access levels between rural and urban areas and the high pressure arising from demographic growth and migration, especially in urban areas. Hence, if the major challenge in rural areas is to increase the level of access, accommodating the new comers and their connection to an already overstretched and often ill-maintained network has become the main issue in fast expanding cities.

Graph 1. Access to drinking water in urban areas in 1990 and 2004 (selected African countries)



Source: JMP

Graph 2. Access to drinking water in rural areas in 1990 and 2004 (selected African countries)



Source: JMP

The weak access to drinking water in Africa is not only a resource issue. According to the FAO, some 14 870 m³/inhab/year renewable water resources are available in Africa overall, including internal and external resources. These resources are considered abundant, but are only marginally exploited under managed conditions. Africa overall has the lowest water storage capacity in the world. Of course, disparity of resource endowment across countries is great in Africa. Africa hosts both among the driest countries in the world (in Northern and Southern Africa), but also among the best endowed (in Central Africa). DRC alone accounts for 23 per cent of internal renewable water resources in Africa. Availability also evolves with climate change, demographic pressures and economic development. By 2025, according to UNEP, 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 and inefficient resource allocation (agriculture uses 68.4 per cent of water, households 24.1 per cent and industries 7.5 per cent). Inefficient land use and agricultural practices (use of fertilisers and pesticides) also contribute to worsen the problem. However, wastage is certainly taking the greatest toll on availability. In most African cities over 50 percent of the water supply is wasted or unaccounted for (see table 1). Thus, significant savings could be made by addressing water conservation, demand management and efficiency of use.

A generally low and disparate operational performance of the water sector

Sound operational management of water systems is key to improve access to water and sanitation. Table 1 displays 6 indicators of operational management - the continuity of service and the average number of hours of water supply, the estimate of unaccounted for water, the operating cost coverage ratio, the billing collection rate, the number of employees per 1000 connections and the commercial perception of water services - for 11 Sub-Saharan African countries. Based on this review, Burkina Faso, Mali, Senegal, South Africa and Uganda clearly stand out as high performers.

South Africa performs the best in terms of continuity of water service: 98 per cent of population has continuous access to the water supply. The situation varies in other countries and from one municipality to another. For instance, 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.

Table 1. Operational performance indicators of the water sector (selected African countries)

	Continuous water supply	Estimate of unaccounted for water	Operating cost coverage ratio	Billing collection rate	Staff per 1000 connections	Commercial Perception of Water Service (1=worst 7=best) (World Business Environment Survey 2000)
Burkina Faso	No	15% (2005)	135% (2005)	72% (2005)	9.7 (2005)	NA
Ethiopia	12 hours per day on average	30 to 35% (2006)	80% on average (2006)	NA	6.7 in Adama, 11.5 in Awassa, 28 in Dire Dawa and 16.9 in Harar. (2002)	4.49
Ghana	No	50% to 60% (2006)	NA	NA	Around 60 (2006)	4.72
Kenya	Not everywhere. Continuous in Nyeri and 19 hours per day in Mombasa.	50% (2004)	120% in Nyeri, 94% in Mombasa and 57% in Nakuru. (2000)	54% in Nairobi (2007)	7.3 in Mombasa and 10.8 in Nyeri (2000)	2.52
Mali	No	32% for EDM (2005)	135% for EDM (2005)	94% for EDM (2005)	5.9 for EDM (2005)	NA
Nigeria	4 to 16 hours per day (4 in Abakaliki, 16 in Osogbo)	Up to 83% (2004)	50% in Maiduguri, 19% in Abakaliki and 77% in Kastina (2003)	As low as 43% (2004)	Up to 48 (2004)	2.59
Senegal	Yes in Dakar	20% (2003)	158% for SDE (2003)	98% (2005)	3.2 (2005)	3.59
South Africa	Yes. 98% of population receives continuous water supply	31 % on average, 19.2% in Cape Town and 29% in Johannesburg (2006)	87% in Cape Town and 92% in Johannesburg (2006)	83% in Cape Town and 76% in Johannesburg (2006)	1.6 in Cape Town and 1.2 in Johannesburg (2006)	5.7
Tanzania	No	Range from 28% to 86% (2006)	Between 100 and 110% (2005)	60% to 80% (2005)	Around 14 (2005)	2.93
Uganda	22 hours per day on average.	31% (2007)	Around 141% (2005)	Around 90% (2006)	Around 7 (2007)	4.52
Zambia	15 hours per day on average, 11 in Lusaka	48% on average and 55% in Lusaka (2005)	77% on average; 78% in Lusaka (2005)	77% on average; 81% in Lusaka (2005)	From 8 to 18, depending on provinces. 11 in Lusaka. (2005)	4.25

Source: OECD Investment Division (2007), based on local sources and Ib-net.

Unaccounted for water is very 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 (for reference, 15-20 percent is considered good practice in OECD countries).

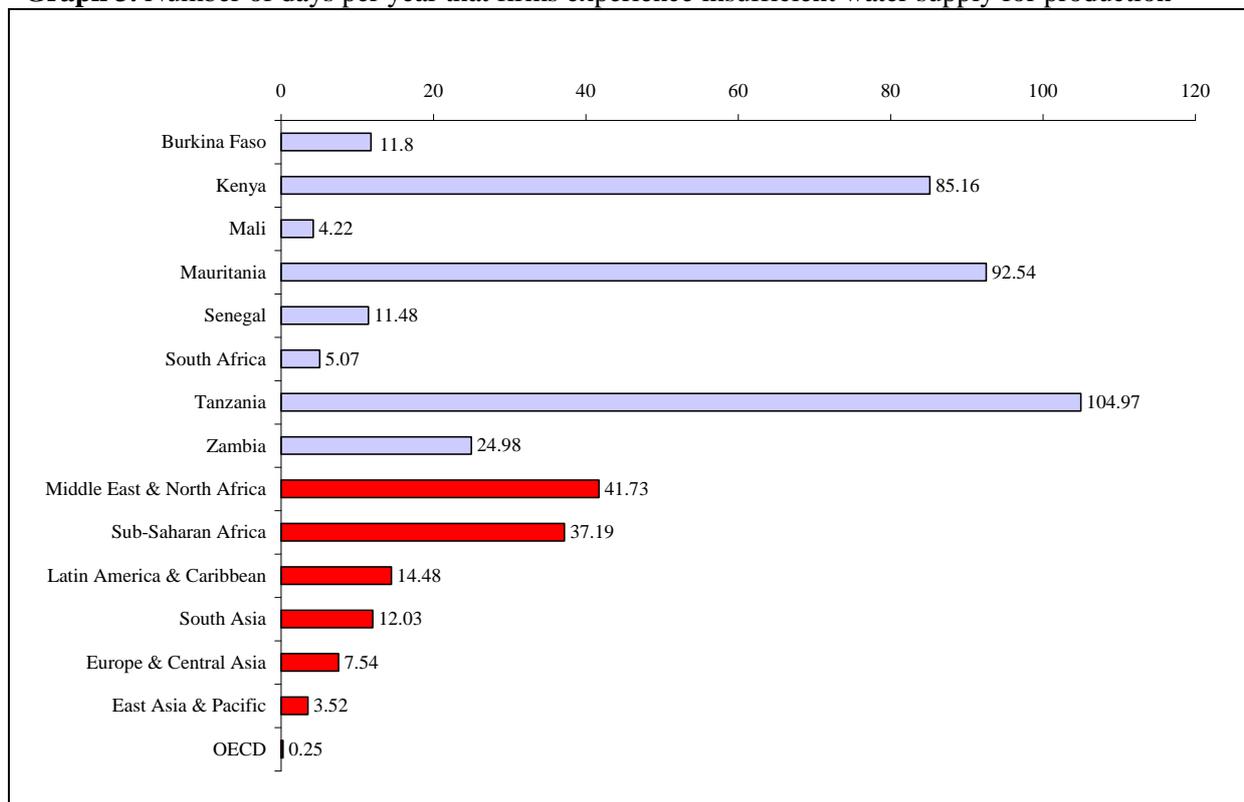
The operating cost coverage ratio represents total annual operational revenues divided by total annual operating costs. It measures the extent to which user fees with other direct contributions can meet service costs (in that case the costs of operations and minor maintenance) and contribute to financial sustainability of the sector. A ratio below 100 per cent implies that operating costs are not covered and therefore the water system is not financially sustainable. According to that criterium, there is cause for concern in Ethiopia, Nigeria, South Africa and Zambia where the operational revenues cover less than or around 80 per cent of the operating costs.

The billing collection rate is another measure of the sustainability of the system. It represents the income as a percentage of the billed revenue. A low percentage may lead to a vicious circle of underfunding. As shown in Table 1, the situation is much contrasted in Africa. On the one hand, in Mali, Senegal and Uganda, more than 90 per cent of water bills are collected (up to 98 per cent in Senegal). On the other hand, in Kenya and Nigeria, the billing collection rate is as low as 53 and 43 per cent respectively. The number of employees per 1000 connections is a crude indicator of labour productivity: the higher the ratio, the lower the productivity. Based on the available information, the number of employees per 1000 connections varies substantially across Africa. In Ghana and Nigeria, the situation is extreme, with a particularly high number of employees per thousand connections.

In addition to these general performance indicators, useful indications of how the water systems work come from the World Bank Enterprise Surveys and the World Business Environment Survey in the form of the commercial perception of water services and of the average number of days per year that firms experience insufficient water supply for production (see graph 3). These indicators remind us that water is not only a domestic issue, but also affects businesses with strong consequences for investment. Based on these indicators, water services are recognized as being of particularly good quality in South Africa, while they are perceived as relatively poor in Kenya, Mauritania, Nigeria and Tanzania. On average, firms working in Sub-Saharan Africa experience insufficient water supply for more than 10 per cent of the year, 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 African countries are 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 and Mali.

Graph 3. Number of days per year that firms experience insufficient water supply for production



Source: World Bank Enterprise Surveys (2002-2006)

At the current pace of progress and given the generally poor operational performance of water and sanitation provision, it is unlikely that most African countries will achieve the Millennium Development Goals by 2015. Table 2 shows for a selection of 9 African countries the estimated cost of reaching the MDGs and the assessment of their progress toward the MDGs, based on AfDB, EUWI, WSP and UNDP (2006). Of the 9 countries surveyed, only 4 of them are likely to fully meet the MDG water target, and just 2 for the sanitation target. Total investment needs to reach the MDGs in these 9 countries are estimated at \$884 million per year for water and at \$655 million for sanitation. For reference, Official Development Assistance for water and sanitation to these countries stood at \$347 million in 2005. To meet these tremendous needs, many countries have sought the involvement of the private sector to develop their water and sanitation infrastructure.

Table 2. Financing needs (selected African countries)

	Burkina Faso	Ghana	Kenya	Mauritania	Mozambique	Senegal	South Africa	Uganda	Zambia
Investment needs to reach the water-MDG	\$70m/yr (rural) \$18m/yr (urban) (2006)	\$46m/yr (rural) \$81m/yr (urban) (2005)	\$63m/yr (rural) \$75m/yr (urban) (2006)	\$14.6m/yr (rural) \$42.1m/yr (urban) (2006)	\$36m/yr (rural) \$53m/yr (urban) (2006)	\$32.8m/yr (rural) \$24m/yr (urban) (2004)	219m/yr (2007)	\$73m/yr (rural) \$20m/yr (urban) (2006)	\$17.2m/yr (rural) (2006)
Investment needs to reach the sanitation-MDG	\$16.60m/yr (rural) \$11.65m/yr (urban) (2006)	\$25m/yr (rural) (2005)	\$34m/yr (rural) \$65m/yr (urban) (2006)	\$1.9m/yr (rural) \$6.7m/yr (urban) (2006)	\$3m/yr (rural) \$17m/yr (urban) (2006)	\$22m/yr (rural) \$45.7m/yr (urban) (2004)	253m/yr (2007)	\$103m/yr (rural) \$49m/yr (urban) (2006)	\$2.3m/yr (rural) (2006)
Investment gap to reach the water-MDG	\$57.99m/yr (rural) \$15.45m/yr (urban) (2006)	\$2m/yr (rural) \$45m/yr (urban) (2005)	24m/yr (rural) Surplus of \$10m/yr (urban) (2006)	\$1.7m/yr (rural) \$10.6m/yr (urban) (2006)	\$12m/yr (rural) \$3m/yr (urban) (2006)	\$22.7m/yr (rural) \$14.5m/yr (urban) (2004)		\$23m/yr (rural) Surplus of \$34m/yr (urban) (2006)	\$8.82m/yr (rural) (2006)
Investment gap to reach the sanitation-MDG	\$14.27m/yr (rural) \$7.85m/yr (urban) (2006)	\$4m/yr (rural) (2005)	Surplus of \$2m/yr (rural) \$45m/yr (urban) (2006)	\$0.4m/yr (rural) \$2.5m/yr (urban) (2006)	Surplus of \$1m/yr (rural) Surplus of \$17m/yr (urban) (2006)	\$17.4m/yr (rural) \$20.9m/yr (urban) (2004)		\$25m/yr (rural) \$9m/yr (urban) (2006)	\$0.8m/yr (rural) (2006)
On track to water-MDG?	Yes in urban areas but not overall.	No.	Likely to be achieved	No.	No.	Likely to be achieved.	Yes, quasi universal service by 2008.	Yes, very likely, but low initial target.	No.
On track to sanitation-MDG?	Yes in urban areas but not overall.	No.	No.	No.	No.	No.	Yes, but not the universal service target by 2010.	Yes, very likely, but the initial target was low.	No.
ODA for water	\$23.7m (2005)	\$34.8m (2005)	\$45.1m (2005)	\$3.8m (2005)	\$64.1m (2005)	\$63.8m (2005)	\$16.6m (2005)	\$45.5m (2005)	\$49.5m (2005)
Public expenditures (% of GDP)			1%, incl. donor funded (expected in 2006/07)				1% (2005/06)	0.6% (2005/06)	

Source: OECD Investment Division (2007), based on OECD DAC Credit Reporting System and AfDB, EUWI, WSP and UNDP (2006) "Getting Africa on Track to Meet the MDGs on Water Supply and Sanitation".

The scope for private sector participation in water infrastructure

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 it was further extended in 2006. In 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).

Since 1990, some 16 African countries have sought to involve the private sector in the development of their water infrastructure. Their activities are synthesised in Table 3. A wide range of contracts have been awarded: service contract, management contract, affermage, lease, concession and BOT. Nevertheless, contrary to the trends elsewhere (in Latin America and in Asia, for instance, where the concession model has been the main vector for private sector involvement), only two concession contracts have been signed so far, 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. The private sector has also been involved, as in the case of Windhoek, in the development of innovative technology for water provision. For instance, water scarcity led the authorities of Namibia to focus on water management and conservation. A programme was introduced to tackle water losses and Windhoek was one of the first cities in the world to introduce direct recycling of effluent for drinking purposes (see box).

Finding innovative solutions to water scarcity: Water management programme & use of unconventional sources of additional water in the city of Windhoek

The City of Windhoek signed a performance-based Private Management Agreement with Windhoek Goreangab Operating Company (WINGOC) in 2002. WINGOC has three shareholders: VeoliaWater, Berlinwasser International and WABAG. In an effort to ensure sustainability for water demand in a context of scarcity, the municipality of Windhoek introduced water-demand management in 1994. The strategy concentrates on changing consumer habits by increasing public awareness of the importance of saving water, and on the implementation of a block tariff system that applies a steeply rising water cost with increasing consumption. Some other measures include: the reduction of residential plot sizes; the implementation of legislation to address water conservation in Windhoek; and improved maintenance and technical measures to reduce leaks. In 2006, unaccounted for water was 10.3 per cent, a very good result compared to other municipalities. Windhoek was one of the first cities in the world to introduce direct recycling of effluent for drinking purposes. Purified effluent is also provided to consumers for landscape gardening. 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.

Source: AfDB/OECD African Economic Outlook 2007

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. In a context where the progress of conventional public service provision has barely kept pace with rapid population growth and migration to urban areas, 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. 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. In Mauritania, 356 management contracts have been awarded to independent operators in small towns (see box).

Mauritania: the delegation of water service delivery in small cities

Mauritania 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.

Source: Based on and as reported by Building Partnership for Development

Table 3. Overview of private sector participation (selected African countries)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
Burkina Faso												5-year service contract with ONEA. Extended 2 years								
												BOT for the Ziga station								
	Several civil engineering firms (76 in 2004) work together with ONEA in drilling, work provision and the establishment of small networks.																			
Central African Republic	15-year lease contract in Bangui. Terminated early.																			
Republic of the Congo												2-year management contract in Brazzaville.								
Gabon								20 year concession contract in Libreville, Port-Gentil and Franceville												
Ghana									5-year management contracts in 2 small towns											
												5-year management contract for water supply of Accra								
	Several independent operators manage small piped networks																			
Kenya						3.5-year service contract for Malindi city														
											5-year management contract for Malindi city									
											10 year water billing and revenue contract for Nairobi. (suspended)									
Mali											20-year concession contracts with the national water and electricity operator. Terminated early.									
	Several independent operators of networks in Bamako (25 currently)																			

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
Mauritania				Since 1993, more than 300 management contracts have been awarded to independent operators in small towns (356 currently)																
Mozambique														15-year lease contract for Maputo and Matola						
														8-year management contract for Beira, Quelimane, Nampula, Pemba.						
	Several independent operators of small networks in Maputo and Matola (about 200 currently)																			
Niger													10-year lease contract.							
Namibia													20-year lease contract in Windhoek.							
Senegal																10-year affermage contract in Dakar			Extended for 5 years	
	A number of formal and informal private sector enterprises are active in Senegal's urban water services sector. Société Nationale des Eaux du Sénégal offers tenders for implementing different works.																			
South Africa				25-year management contract in Queenstown and Stutterheim																
														10-year lease contract in Stutterheim						
										10-year management contract in Nkonkobe. Cancelled.										
																20-year Build, own, and transfer in Durban.				
																30-year Rehabilitate, operate, and transfer contract in north Durban				
																30-year Build, rehabilitate, operate, and transfer in Nelspruit.				
																5-year management contract in Johannesburg			6-year management contract in Maluti-a-Phofung local municipality area.	

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
Tanzania														10-year lease contract for water supply of Dar es Salaam and Bagamoyo. Collapsed in 2005.						
Uganda									3-year management contract in Kampala.				2-year management contract in Kampala, not extended.							
	Local private operators provide services under short term management contracts (currently 13 operators)																			
Zambia													4-year management contract in Nkana, Konkola, Nchanga, Mufulira and Luanshya							
	Small-scale experience is very limited.																			

Source: OECD Investment Division (2007).

Institutional set-ups governing water infrastructure

Regulatory framework

As underscored by the OECD *Principles for Private sector Participation in Infrastructure*, a well defined institutional environment is a key condition of success for private sector participation in water infrastructure. Over the last 10 years, one area where most countries have engaged substantially is the setting up of regulatory frameworks and most notably the establishment of a regulatory agency, with a role to examine and approve tariffs, monitor and enforce standards of performance and receive and investigate user's complaints. Table 4 synthesises the information on regulatory agencies in 13 African countries. Among these countries, 6 have not created independent regulatory agencies and regulate private sector involvement either by way of contract, or directly by the relevant Ministry. In the 7 remaining countries, experience with water regulatory agencies is relatively recent, with in 5 instances the establishment of the regulatory body since the beginning of this decade. Most of the newly developed regulatory agencies have been given legal and financial autonomy. However, their independence remains fragile because of important political interference.

Regulation by an independent agency is not the only model of regulation. As a matter of fact, one of the most successful examples of private sector participation in water on the continent, the affermage contract in Senegal, is strictly regulated by contract. Establishing a regulatory agency mainly helps to clarify the different roles in water provision by disentangling the regulatory functions from the delegation functions and from operations. Delineation of responsibilities is much more difficult to achieve when all functions are kept under State responsibility. As summarized in the box below, Senegal managed to achieve this delineation through an appropriate design of the contract and a 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.

Successful Public-Private Partnership in Urban Water Supply in Senegal

The success of the public-private partnership 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, is upgrading the supply network under its contract, but also because increased water consumption means bigger profits. 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.

Source: AfDB/OECD African Economic Outlook 2007

Table 4. Regulatory agencies in selected African countries

	Presence of regulatory agency	Activities	Independence	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.	<ul style="list-style-type: none"> - Provides guidelines for rates - Examines and approves water rates - 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).	<ul style="list-style-type: none"> - 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)	<ul style="list-style-type: none"> - Promotes and organises competition in the sector, - Sets tariffs. 	Legal constituted body and financial independence	2000
Mauritania	The Autorité de Régulation Multisectorielle and the Agence Nationale d'Eau Potable et d'Assainissement (ANEPA) for regulation of contracts with small water suppliers.	ANEPA both delegates and regulates	Yes for the "Autorité de Régulation Multisectorielle", conflict of interest for ANEPA	2001

Mozambique	The Water Regulatory Council (CRA) is responsible for economic and other regulation of water systems that are under delegated management.	Regulates only the areas under private management.	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. Currently there is no independent regulation of water service delivery. However, the creation of a National Water Commission - independent regulator for water supply and resources management - is envisaged.			
Senegal	No. Regulation by contract.			
South Africa	No, regulatory functions undertaken by the Department of Water Affairs and Forestry (DWAF).			
Tanzania	Yes, Energy and Water Utilities Regulatory Authorities (EWURA)	<ul style="list-style-type: none"> - 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	Yes, the National Water Supply and Sanitation Council (NWASCO).	<ul style="list-style-type: none"> - 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 Investment Division (2007), Water Database.

Corporatisation, decentralization and Integrated Water Resources Management

The three other main institutional reforms undertaken by African countries over the last ten years are related to corporatisation, decentralisation and integrated water resources management. Corporatisation of local operators and decentralisation may contribute both to reducing political interference and to increasing economic efficiency of water utilities. Establishing legal and financial independence of water operators is likely to reduce administrative burdens and possibly political intervention. It may also contribute to greater transparency of costs and financial flows, as well as to greater competition among water operators, be they public or private. Administrative burdens can also be moderated by decentralising water policy to regions, as they may be able to evaluate needs more precisely.

Table 5 summarizes corporatisation and decentralisation policies in 12 African countries. In most countries, local operators have been corporatised. However, in Kenya, Nigeria and Tanzania, corporatised public operators are still characterised by limited independence. Decentralisation has also been adopted by most of the countries surveyed, albeit with various levels of implementation. In most countries, water policy remains de facto centralized, or only partially decentralized. In any case, decentralisation was rarely followed by devolution of financial means.

Table 5. Corporatisation, decentralisation and Integrated Water Resources Management in selected African countries

	Corporatisation of local operators	Centralisation versus decentralisation	Integrated Water Resources Management
Burkina Faso	Yes, one national operator ONEA, a limited liability company (Société d'Etat) with legal autonomy.	The "Guiding Texts for Decentralization", (Textes d'Orientation de la Décentralisation) published in 1998 stipulate that the municipalities are the new entities responsible for water and sanitation at local level. However, the technical and juridical mechanism that transfers this responsibility is not yet in place.	The IWRM principles are part of the main policy and legal framework. The country put in place IWRM action plans in 2003.
Ethiopia	Yes, The Addis Ababa Water and Sewerage Authority (AAWSA) was established as an autonomous body in 1971.		In the process of preparing national strategies but requiring further work.
Ghana	Yes, Ghana Water Company Limited (GWCL) established in 1999.		In the process of preparing national strategies but requiring further work.
Kenya	Yes, but lack of real independence.	Service provision has been recently devolved down to regional Water Services Boards (WSBs)	In the process of preparing national strategies but requiring further work.
Mauritania		Decentralized	In the process of preparing national strategies but requiring further work.
Mozambique	No?	The government intends to withdraw from direct implementation of services and to decentralize operational water resources management to autonomous catchment authorities which will become financially self sufficient.	In the process of preparing national strategies but requiring further work.
Nigeria	Yes, but lack of real independence.	Decentralized. Water supply is a state responsibility in Nigeria and each of the 36 states and the Federal Capital Territory has created a State Water Board to exercise its authority. The State Water Boards are vested with the	In the process of preparing national strategies but requiring further work.

		duty to provide service in both urban and semi-urban areas.	
Senegal	Creation of an asset holding company, the Société Nationale des Eaux du Sénégal (SONES), in 1995.	Centralized	In the process of preparing national strategies but requiring further work.
South Africa	Yes	Decentralisation is not fully achieved yet.	The IWRM principles are part of the main policy and legal framework. The country put in place IWRM action plans in 2004.
Tanzania	Under the Water Works Order of 1998, 19 Urban Water and Sewerage Authorities were established as “autonomous” bodies. Currently, they are functional but challenged by usual deficiencies.	The Public Service (2000) and Local Government Reform Programs (1998) have transformed local governments into multi-sectoral units with legal status and responsibility for social development and public services provision, including water supply.	In the process of preparing national strategies but requiring further work.
Uganda	Yes	Centralized planning. Management of water services is responsibility of town councils, supported by the Directorate of water Development (part of Ministry of Water Lands and Environment)	The IWRM principles are part of the main policy and legal framework. The country put in place IWRM action plans in 1995.
Zambia	Yes, establishment of 10 commercial utilities in 2000.	Transfer of water and sanitation services to local authorities in 1997 via the Water Supply and Sanitation Act.	In the process of preparing national strategies but requiring further work.

Source: OECD Investment Division (2007).

The scarcity of water combined with its uneven distribution and its competing uses, its externalities on health, education and the environment all call for a holistic approach. The need for a comprehensive and integrated approach has long been recognised and the principles of a holistic approach to water were established in 1992 at the International Conference on Water and the Environment in Dublin and at the United Nations Conference on Environment and Development held in Rio de Janeiro. In 2002, the plan of implementation of the Johannesburg World Summit on Sustainable Development aimed at stimulating the adoption of IWRM by calling all countries to develop integrated water resources management and water efficiency plans by 2005. IWRM is today largely attempted, but with various levels of understanding. In Africa, 5 countries are highlighted by the GWP as good performers: Burkina, Namibia, South Africa, Uganda and Zimbabwe.

In all five countries, the IWRM principles are part of the main policy and legal framework. In addition, these principles are also covered in the various official planning and development programmes related to poverty reduction (PRSP for instance), agriculture, energy and environment. Four out of the five countries have put in place IWRM action plans: Burkina in 2003, South Africa in 2004, Uganda in 1995 and Zimbabwe in 2001. Namibia is implementing the water policy through various programmes and basin committees. All countries are characterized by strong participation of all stakeholders from ministries to NGOs and strong leadership at national level (usually by the main ministry in charge: the Department of Water Affairs and Forestry in South Africa, the Water Resources Management Department in Uganda, the Ministry for Water Resources and Infrastructure Development in Zimbabwe).

The importance of a coherent strategic approach to the sector requires mechanisms to channel the contributions of the different actors, especially since responsibility for water and sanitation is split among different government ministries and public agencies. In that respect, the experience with a Sector Wide Approach to Planning (SWAP) in Uganda of bridging the segmentation of the sector and harmonising the different interventions has been positive. Another potential fruitful political innovation in that direction is the newly established steering committee across the different ministries in charge of water in Ethiopia.

The Sector Wide Approach to Planning (SWAP) in Uganda

In order to co-ordinate the participation of all stakeholders in the water and sanitation sector, Uganda adopted a Sector Wide Approach to Planning (SWAP) for the Water and Sanitation Sector in September 2002. SWAP is a mechanism whereby Government and development partners support a single policy and expenditure programme using a common approach. The SWAP mechanism has resulted in a harmonised sector-planning framework in which duplication of efforts by different stakeholders has been minimised.

Source: AfDB/OECD African Economic Outlook 2007

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- ***Annex A. An evidence base of country experiences in the water and sanitation sector***

In order to support the conceptual work on private sector participation to water and sanitation infrastructure, a systematic review of country experiences is being carried out based on a common framework. The database involves some 30 to 35 countries in Africa, Latin America and Asia/ Pacific in 7 "dimensions" of key importance for private sector involvement in the water and sanitation sector, such as access rates, institutional setting and pricing policies.

Tentative list of countries:

BRICS	Africa	Asia & Pacific	Latin America	MENA
Brazil	Burkina Faso	Bangladesh	Argentina	Algeria
Russia	Ghana	Cambodia	Bolivia	Egypt
India	Kenya	Indonesia	Chile	Jordan
China	Mauritania	Malaysia	Colombia	Morocco
South Africa	Mozambique	Nepal	Honduras	Tunisia
	Senegal	Philippines	Mexico	
	Tanzania	Singapore	Peru	
	Uganda	Thailand		
	Zambia			

Tentative list of indicators

Indicators	Sub-Indicators
1. Demography	Population growth 2005-2015 Urban population growth 2005-2015 Total Population in 2005 Total Population in 2015 Population density (pop/km ²) 2005 Population density (pop/km ²) 2015 Urban population in 2005 Urban population in 2015
2. Economic and business environment	Elements of business environment Informal economy estimate (% GNP) Corruption levels
3. Water resources	Water scarcity (Total renewable freshwater per capita in m ³ /inhab/yr) Over withdrawal (Total water withdrawal as percentage of total renewable water resources) Foreign dependency ratio (percentage of total renewable water resources originating outside the country)
4. Water uses	Agriculture, Domestic and Industry withdrawal
5. Access to water and sanitation	Improved Drinking Water Coverage in Urban Areas (Total) in 1990 and 2004 Improved Drinking Water Coverage in Urban Areas (Household Connection) in 1990 and 2004 Improved Drinking Water Coverage in Rural Areas (Total) in 1990 and 2004 Improved Drinking Water Coverage in Rural Areas (Household Connection) in 1990 and 2004 On track to water-MDG? Improved Sanitation Coverage in Urban Areas in 1990 and 2004 Improved Sanitation Coverage in Rural Areas in 1990 and 2004 On track to sanitation-MDG?
6. Water management	Percentage of wastewater treated Average domestic consumption of water in m ³ /inhab/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 Billing collection rate Staff per 1000 connections %customers satisfied

7. Pricing policy	<p>Geographical tariff setting</p> <p>Progressive tariff structure</p> <p>Domestic drinking water tariff in US \$ per m3 (based on 15 m3 consumption per month)</p> <p>Domestic drinking water tariff in US \$ per m3 (Lowest block)</p> <p>Domestic drinking water tariff in US \$ per m3 (Highest block)</p> <p>Domestic wastewater tariff in US \$ per m3 (based on 15 m3 consumption per month)</p> <p>Affordability: Average annual expenditure on water as % of GDP per head (average domestic consumption per capita * price of water / GDP per capita)</p> <p>Sustainable level</p> <p>Metering practice</p>
8. Water institutional & policy framework	<p>Elements of institutional and policy framework</p> <p>Presence of regulatory agency</p> <p>Independence of the regulatory agency</p> <p>Activities (monitoring quality, roll out and consumers complaints?)</p> <p>Year of introduction</p> <p>Dispute resolution mechanisms</p> <p>Corporatization of local operators</p> <p>Basin Organizations</p> <p>Centralization versus decentralization</p> <p>Level of decentralization</p> <p>Degree of devolution of means and responsibilities</p>
9. Private sector participation	<p>Presence of private operators</p> <p>% of population served by the private sector for drinking water</p> <p>% of population served by the private sector for sanitation services</p> <p>Location, sector, type of contract.</p> <p>Year of introduction of private sector participation</p> <p>Past disputes</p>
10. Future of private sector participation	<p>Population perception / civil society activity</p> <p>Expected development of private sector participation in water supply</p> <p>Expected development of private sector participation in sanitation</p>
11. Investment needs	<p>Public expenditure in water and sanitation (% of GDP)</p> <p>Unit cost water and sanitation</p> <p>Investment needs to reach the MDGs (water and sanitation)</p> <p>Investments gap (water and sanitation MDG)</p>
12. Available financing tools	<p>Depth of financial system (private credit / GDP)</p> <p>ODA to water and sanitation</p> <p>FDI to water and sanitation</p> <p>Financing mechanisms used in WSS</p>