

GERMAN DEVELOPMENT COOPERATION

PRIVATE SECTOR PARTICIPATION IN URBAN  
WATER SUPPLY IN SUB-SAHARA AFRICA

Final Report,  
November 2005.

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## Private Sector Participation in Urban Water Supply in Sub-Saharan Africa

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## PSP in urban water supply in Sub-Saharan Africa

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### EXECUTIVE SUMMARY

#### WHAT IS AT STAKE?

The involvement of private companies in infrastructure projects has been on the increase for the past 10 to 15 years. The PSP debate has not bypassed the water sector on the African continent. Governments, with the support of donors, have initiated broad reforms of their urban water sectors with the goal of improving efficiency in service delivery, reaching financial sustainability and extending access. In several cases, PSP has been a key tenet of such reforms and a large variety of PSP models have been implemented, some with very positive results and others less so. In other cases, the mere threat of “privatisation” has led to commercialisation of inefficient state owned water utilities or to the implementation of alternative business oriented management structures. PSP reforms have attracted quite a lot of criticism from stakeholders in developed and developing countries alike.

Reflecting on past experiences is critical to try and understand what works and what does not. KfW and GTZ commissioned this study to examine experiences with water services reform during the past decade in seven selected Sub-Saharan African countries (Burkina Faso, Kenya, Mali, Senegal, Tanzania, Uganda and Zambia) and provide elements to answer those questions.

#### WHAT REFORMS HAVE BEEN CARRIED OUT?

Since the early to mid 1990s, the countries under review have all undertaken broad reforms of their urban water sectors, including market structure reform, to reach a more efficient scale for operation and the adoption of a legal and regulatory framework establishing clear separation between policy making, regulation and operations functions and the introduction of private sector management (PSP).

A wide mix of PSP contract forms has been used, ranging from a service contract (Burkina Faso) to a management contract (with or without performance-based payments, as in Uganda, Kenya and Zambia), an affermage (Senegal), a lease (Dar es Salaam in Tanzania) and a concession contract (as in Mali, with simultaneous sale of shares). Most PSP has taken place at the level of national operators covering the largest urban centres in the country (as in Mali, Senegal and Burkina Faso) or in capital cities (such as in Tanzania or in Uganda). In addition, there have been limited attempts at private sector management in small urban centres, either with international operators such as in Malindi (Kenya) or with local operators, as in Uganda.

Figure ES 1 below shows in a schematic way the types of reforms that the seven countries have carried out so far, divided between overall sector reform and private sector participation. The figure on the left hand side shows the typical menu of reform packages that can be introduced, ranging from limited to extensive on both axis (overall sector reforms and PSP). The figure on the right hand side positions the seven countries, together with an assessment of whether the PSP contracts have been successful or not. In stark green, we represent the star performer (Senegal) and in light green those that have performed reasonably well. In stark orange, we show the contracts that have experienced or are experiencing serious difficulties. This shows that the reform package combination that was pushed for in the early 1990s (high powered private sector contract combined with regulatory reforms), which was implemented in Mali for example, has experienced difficulties whereas more limited PSP combined with sector reforms has yielded reasonable results (as in Uganda for example).

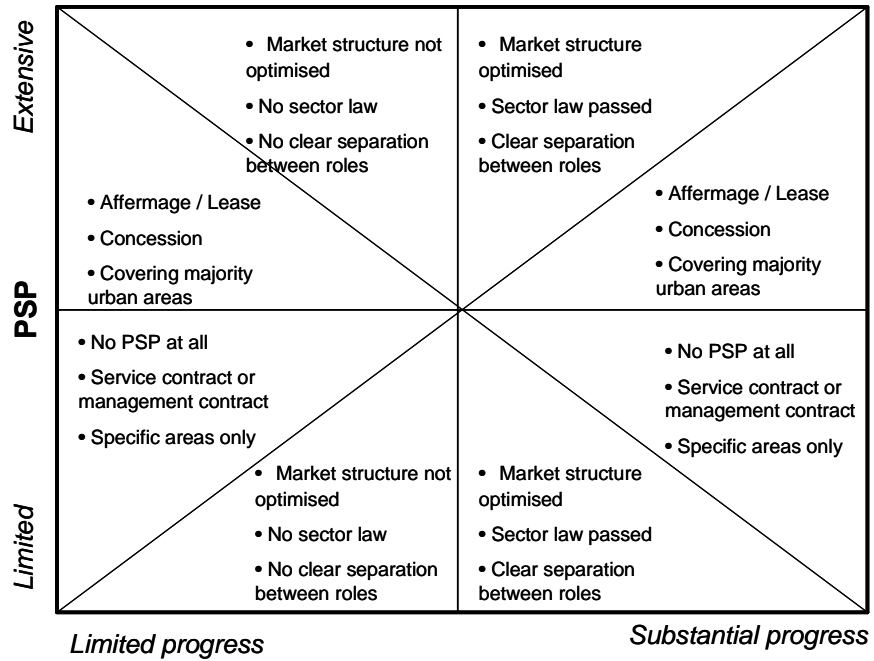
Figure ES 2 places those reforms on a timeline with the contract types. The arrows show the length of the contract, the green stars the successful or planned renegotiations and the orange symbol shows those contracts that were terminated early. This shows that the countries under review are at very different stages of their reform process: for example, Kenya has only introduced limited private sector participation whereas Senegal is already planning the second stage of reforms, with the ongoing 10-year affermage contract coming to an end in March 2006.

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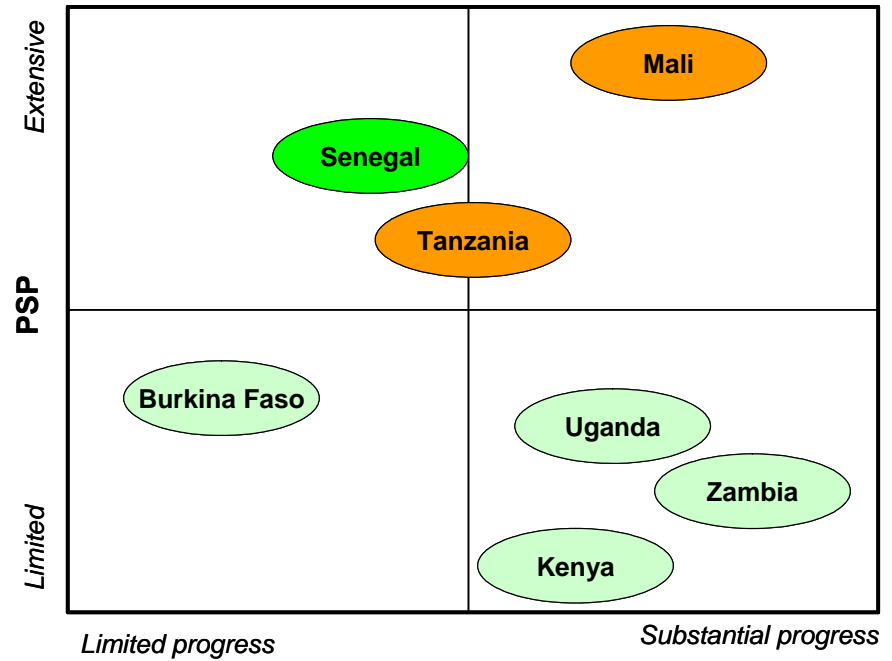
Figure ES 1 – Schematic representation of sector reforms and PSP processes in the seven case studies

### Criteria for evaluation



Overall sector reforms

### Approximate location of case studies

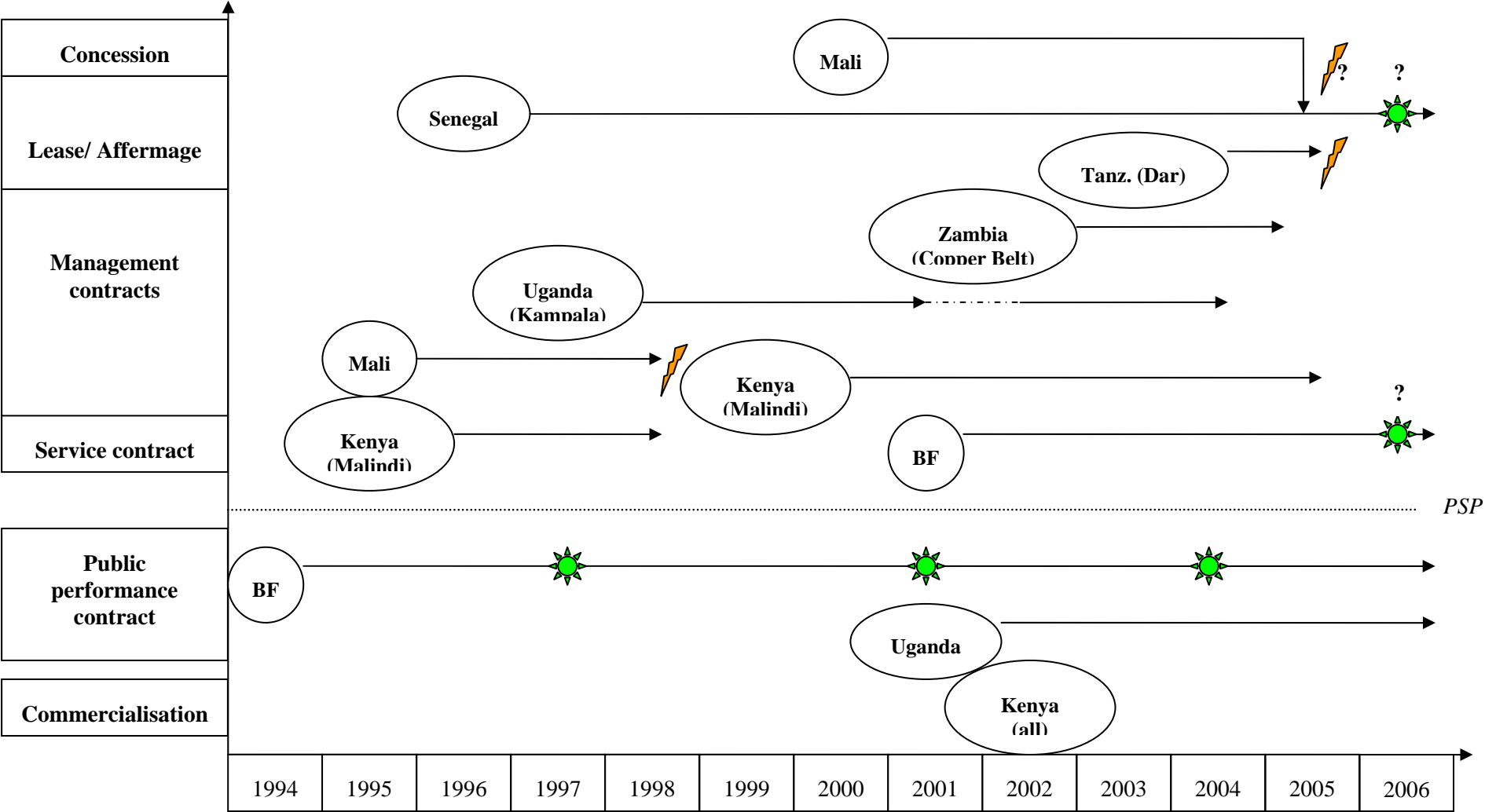


Overall sector reforms

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Figure ES 2 - Contracting timeline



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### HOW ARE THE SECTORS PERFORMING NOW?

Even though each country has followed its own reform path and may be at a different stage of the reform process, comparing performance at a given point in time allows us to evaluate whether performance in a particular country is above average or whether it is lagging behind and to identify examples that may be worth emulating or avoiding. Table ES1 provides a summary of this data for ease of comparison.

#### *In terms of technical performance*

There are wide disparities from one country to the next in terms of technical performance, showing that good results are definitely achievable despite the high-risk profile of the countries under review:

- Coverage in terms of population served (within the perimeters of the service providers under review, i.e. the main service providers) is usually unsatisfactory with an average of 74% of the population in the service area getting access to the service. Senegal has the highest country-wide figure (84%) and Nairobi has high coverage too (88%) although this figure is highly uncertain;
- Staffing efficiency is generally poor, notwithstanding the fact that labour is cheap in all of the countries in the study. The ratio of employees per 1,000 connections is around 10 on average (with an extreme of 15 staff in Dar Es Salaam, Tanzania). A notable exception is Senegal with only 3 staff per 1,000 connections, which is in line with developed country standards;
- For most countries, UFW levels tend to be high and can go up to 37% in Uganda (NWSC) or even 55% in Dar es Salaam, Tanzania. In some cases, however, UFW levels are very low and at levels comparable with developed countries, such as in Burkina Faso (15%) and Senegal (20%);
- Collection efficiency is often poor (80% on average), but again wide differences are observed. Collection rates range between 60% in Dar es Salaam in Tanzania to 98% in Senegal and 100% in Uganda in 2003-04, which is excellent by any standard;

#### *In terms of financial performance*

Financial performance was originally rather fragile but is on the whole becoming more sustainable:

- Revenue levels vary substantially across the cases ranging from €327 per connection in Burkina Faso to €70 per connection (Zambia). The high figure in Burkina Faso is most likely due to the high proportion of public connections there;
- Average tariff levels vary substantially, ranging from a high of €0.66 in Senegal to very low levels of €0.10 for Zambia. Some of these differences can be explained by the relative strength of the currencies in each country but also by differences in tariff policies and willingness to charge in order to recover costs;
- Where revenue levels and tariffs are higher, financial performance not unsurprisingly appears to be better, with higher rates of cost recovery;
- Operating cost recovery on the whole is reasonably good, although it is less than 100% for Zambia and Tanzania (excluding Dar es Salaam);
- Capital cost recovery is unsurprisingly less than 100% for all cases where we have data available, showing that subsidies are likely to be required for a long period before reaching full cost recovery;
- Net trade receivables range from between 4.3 months (Uganda) to 6.3 months (Dar es Salaam, Tanzania) indicating some difficulties at recovering customer debts, particularly from public sector customers.

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Table ES 1: Summary data from the case studies: performance and physical comparators

| Technical performance       |                        |                            |                       |               |                         |                       |                       |                                 |
|-----------------------------|------------------------|----------------------------|-----------------------|---------------|-------------------------|-----------------------|-----------------------|---------------------------------|
|                             | Number of towns served | Population in service area | Number of connections | Coverage rate | Staff/1,000 Connections | UFW                   | Collection Rate       | Opex/ connection/ year (€)      |
| <b>Burkina Faso (ONEA)</b>  | 41                     | 2,562,786                  | 71,242                | 72%           | 9.7                     | 15%                   | 72%                   | 242                             |
| <b>Kenya (NCWSC)</b>        | 1                      | 2,100,000                  | 158,000               | 88%           | 12.0                    | 51%                   | 63%                   | 213                             |
| <b>Mali (EDM)</b>           | 16                     | 2,013,039                  | 82,755                | 60%           | 5.9                     | 32%                   | 94%                   | 196                             |
| <b>Senegal (SDE, SONES)</b> | 56                     | 4,902,959                  | 359,893               | 84%           | 3.2                     | 20%                   | 98%                   | 167                             |
| <b>Tanzania (DAWASA)</b>    | 1                      | 3,000,000                  | 103,782               | 70%           | 14.8                    | 55%                   | 60%                   | 162                             |
| <b>Tanzania (UWSAs)</b>     | 19                     | 2,990,962                  | 137,595               | 77%           | 13.6                    | 46%                   | 80%                   | 92                              |
| <b>Uganda (NWSC)</b>        | 15                     | 2,101,870                  | 100,475               | 65%           | 10.0                    | 38%                   | 101%                  | 132                             |
| <b>Zambia (10 CUs)</b>      | 10                     | 3,597,877                  | 219,336               | 72%           | 9.9                     | 50%                   | 74%                   | 97                              |
| <b>Average</b>              |                        | 4,000,916                  | 188,135               | 73%           | 9.9                     | 38%                   | 80%                   | 162                             |
| Financial performance       |                        |                            |                       |               |                         |                       |                       |                                 |
|                             | Reporting year         | Total Revenues             | Average Tariff        | EBITDA / m3   | Operating cost recovery | Capital cost recovery | Net trade receivables | Revenues / connection/ year (€) |
| <b>Burkina Faso (ONEA)</b>  | 2002-03                | 23,286                     | €0.53                 | €0.18         | 135%                    | 88%                   | 5.49                  | 327                             |
| <b>Kenya (Nairobi)</b>      | 2004-05                | 40,154                     | €0.54                 | n.a.          | n.a.                    | n.a.                  | n.a.                  | 254                             |
| <b>Mali (EDM)</b>           | 2002-03                | 21,841                     | €0.44                 | €0.15         | 135%                    | 93%                   | 6.05                  | 264                             |
| <b>Senegal (SDE)</b>        | 2003                   | 69,802                     | €0.66                 | €0.28         | 158%                    | 104%                  | 4.68                  | 194                             |
| <b>Tanzania (DAWASA)</b>    | 2002-03                | 18,634                     | €0.13                 | €0.01         | 111%                    | 90%                   | 6.26                  | 180                             |
| <b>Tanzania (UWSAs)</b>     | 2002-03                | 12,544                     | €0.16                 | €0.00         | 99%                     | n.a.                  | 5.9                   | 91                              |
| <b>Uganda (NWSC)</b>        | 2003-04                | 18,752                     | €0.47                 | €0.16         | 141%                    | 91%                   | 4.32                  | 187                             |
| <b>Zambia (10 CUs)</b>      | 2003-04                | 15,164                     | €0.10                 | -€0.04        | 71%                     | n.a.                  | n.a.                  | 69                              |
| <b>Average</b>              |                        | 27,522                     | €0.37                 | €0.10         | 121%                    | 93%                   | 5.45                  | 195                             |

Note that Mali data is based on an estimate of the share of water - taken to be 20% of total revenues and costs



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### WHAT CAN WE LEARN FOR FUTURE WATER SECTOR REFORM DESIGN?

#### *How can sustainable performance improvements be achieved?*

#### **Performance improvements from PSP are by no means guaranteed**

PSP, when well-designed, can work very well in terms of delivering improvements and good levels of overall sector performance as in the case of Senegal for example. PSP arrangements, however, do not guarantee improvements and can lead to deteriorations in performance which might be caused by one or more reasons including: poor design; inappropriate allocation of risk; poor operator performance; poor institutional framework; and unfavourable operating environment.

#### **Publicly-owned corporations can also respond positively to incentives, particularly if rewards are provided to their managers and employees for improved performance**

Public ownership and operation can also work reasonably well when strong incentive mechanisms are put in place, such as in Uganda, Burkina Faso (with additional private sector participation introduced via a service contract), Tanzania and Zambia. In Uganda, a short term PSP experience with an international operator enhanced the public sector's capacity to specify and oversee performance.

#### *What lessons can be drawn for future PSP design?*

#### **Avoid making mistakes!**

The first basic lesson would be to avoid making mistakes as far as possible in contract design, including tariff formulas. A lot of the problems in Mali occurred because of mistakes and inaccuracies in the design of the tariff formulas (for electricity in particular), even though a great number of parties (including the Government, bidders and donors) had been given the opportunity to review the contract documents. This opened the way for questioning the validity of the contract and gave ground to the regulator for exercising a considerable degree of discretion, since the validity of the contract as the main legal instrument binding the parties was called into question.

#### **Be realistic about the parties' expectations for designing risk allocation**

The second lesson is to be realistic about risk allocation and all parties' expectations, including the public and private contractual parties and other stakeholders, such as donors or consumers. Given the difficulties faced by water PSP contracts around the world (and Sub-Saharan Africa is no exception), the private sector may be willing (in some cases) to manage water sector operations but is likely to lack any appetite for financing new works and coverage expansion. This means that, in the short to medium term at least, the bulk of water sector financing will need to come from tariff revenues and public sector financing, either from Governments or from donors.

#### **In particular, be careful about transferring commercial risk**

The key issue in the countries reviewed appears to be whether the commercial risk can be transferred to the private operator or whether it is too risky to do so because of a lack of reliable data or high levels of uncollected debts. Where PSP has encountered serious difficulties, it is invariably the case that too much risk had been transferred to the private operator given the circumstances. For example, in Mali, it was probably too risky to shift all commercial risks to the private operator when the Government was not paying its bills and had not committed to paying them in the short-term (through compensation for example). In Tanzania, the lease contract placed a significant level of (commercial) risk on the operator, City Water. The tariff structure and remuneration formula in place meant that City Water faced considerable revenue risk as their revenues were wholly reliant on cash collections (and not on some other means of receiving revenues) except for any reductions for failing to meet performance targets. Given the poor level of revenue collection and the lack of data on its customer base, this degree of risk transfer simply proved too high for the operator to bear.

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#### **Get reliable data as a pre-requisite to shifting risk to the private operator**

It is essential to have reliable data in order to define the private operator's objectives in an achievable, yet challenging manner. Lack of reliable data was one of the major difficulties encountered in the preparation and in the implementation of the lease contract in Dar Es Salaam in Tanzania. To this date, there is insufficient data available to determine City Water's revenue potential accurately: City Water does not know how many customers it has and this is a critical issue as most customers are billed on an assessed basis. There is also no reliable data on volumes of water produced or on volumes of water billed, which means that it is very difficult to tell whether the lease contract as a structure would have been financially sustainable even if City Water had been performing adequately.

#### **Take extreme care in defining performance targets**

In Senegal, the leakage targets were set in a rather unrealistic manner (based on what had been achieved elsewhere for lack of available detailed data in Senegal) and proved very difficult to achieve, even though they were renegotiated a number of times. This example shows that one should avoid setting unrealistic targets and that clear mechanisms for adapting them as more information becomes available during the life of the contract should be introduced.

#### **Establish practical mediation and dispute resolution mechanisms**

In Senegal, sound relationships between the actors (including between the private operator, SDE, the asset-holding company, SONES and the Government represented through the Ministry) permitted to adapt the contractual arrangements based on the emergence of new information (such as on network losses) or problems identified in the original arrangements and contained conciliation mechanisms. The contractual arrangements provided a good framework for dealing with issues as they emerged.

In Tanzania, such a mediation mechanism had been authorized in the contract but was not really allowed to follow its course. The request for an interim review under the contract was refused following an audit carried out in line with the contract provisions by the Technical Auditors because the necessary Material Change of Circumstance was deemed not to have occurred, principally because the data was not available to demonstrate a material change (even though there might have been one). An external mediator was brought in to help re-negotiate the contract and a proposed solution was set out, but City Water failing to accept those terms led to early contract termination in 2005.

#### **A step-wise approach to PSP may be advisable...**

Given the need for a number of pre-conditions to be in place to transfer more risks to the private sector, it appears from the case studies that a step-wise or progressive approach to PSP may be required, introducing milder forms of contracts with specific objectives first rather than rushing into deeper forms of contract. PSP reforms should be planned over a reasonably long timeframe and establishing stability in the sector should be achieved prior to rushing in with PSP reforms, which are more likely to fail if buy-in for such reforms has not previously been established.

#### **... although it rarely gets implemented as planned...**

However, one needs to be aware that such a progressive approach will also need to be flexible and may not lead to the outcome that was originally envisaged. In fact, in none of the cases under review where such a step-wise approach was advocated was a move to a deeper form of private sector contract successfully accomplished. In Burkina Faso, the Government was initially very reluctant to introduce private sector participation into the management of ONEA, but they eventually accepted a focused service contract under some donor pressure. Although donors initially viewed this contract as a first step to a higher form of PSP, this is unlikely to take place. The existing service contract is to be extended due to some external delays to the investment program but no higher form of PSP is envisaged at this stage.

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#### **Progressive tariff increases to cost-recovery levels are most effective and less socially disruptive**

If possible, tariff reform should be initiated prior to contract signing (also as a way to demonstrate commitment to the private operator) and should then be continued with progressive shifts towards cost-recovery tariffs rather than abrupt ones. Such progressive approach seems to have worked well in Senegal, where the parties informally agreed to increase tariffs by 3% a year until reaching the sector's financial equilibrium. The gradual increases in tariffs were well accepted by consumers.

*How costly are the transaction processes for putting in place and administering PSP arrangements? Do the benefits outweigh those costs?*

#### **PSP does generate substantial costs**

What comes out clearly from the analysis is that PSP does generate substantial costs, both at the time of contract preparation and then during contract implementation, which should not be underestimated. Those costs can be difficult to quantify in some cases but are significant nevertheless: this is for example the case with the cost of government officials' time and attention. In the case of Mali, for example, it appears that the costs incurred for supervising the contract and resolving disputes surrounding the EDM concession are disproportionate considering that the contract is for EDM's perimeter only, i.e. for a provider covering at most 20% of the national population.

For the SAUR contract in the Copper Belt in Zambia, which is a relatively small contract, the World Bank spent €2.4 million on Pre Project Funding (PPF), including €200k on transaction advisors. For this contract, the cost of SAUR's management fee amounted to €1.5 million in 2003 or 27% of the asset-holding company's turnover, which in turn is relatively high.

#### **Given the uncertainties related to the benefits to be expected from PSP, conducting a thorough cost-benefit analysis before embarking on a PSP process would be advisable**

In future cases, a thorough cost-benefit-analysis based on experiences from comparable cases would be a prerequisite for entering a PSP process. The size of the sector (volume of water sold, number of customers, number of towns, density of population) would play a crucial role in defining the limits where bringing in an international private operator would not be cost effective. Although the analysis in the case studies has focused on international private operators, we have also noted the emergence of performing public operators or local private operators (for example, in Tanzania or in Uganda). Calling on their services to improve performance may allow achieving comparable improvements in performance at a substantially lower cost.

*How can regulatory frameworks conducive to improving performance be established?*

#### **Autonomous regulators are relatively rare in the urban water sector in Sub-Saharan Africa and their independence is often opened to question**

Only Mali and Zambia have established a regulator for the water sector (in the case of Mali, the regulator also regulates the electricity sector). In other countries, regulators have been created by law (as in Kenya or Tanzania) but they are in the process of being established (in Kenya, the regulator has been established in 2003 and it has taken up operations in 2004) or have their functions extended to the water sector (in the case of EWURA in Tanzania, also in charge of regulating electricity services). Other countries, such as Senegal, Burkina Faso or Uganda have no regulator in place and rely on various forms of regulation by contract. One significant issue is that creating truly independent regulatory agencies in the Sub-Saharan African context is proving extremely difficult if not impossible, even if the agency is set up in a relatively independent manner on paper.

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**Autonomous regulatory agencies with considerable discretion are often perceived negatively by private operators, as increasing regulatory risk rather than reducing it**

In Mali the water and electricity sector regulator, the CREE, was set up with almost all the attributes of an independent regulator, including a considerable degree of discretion with respect to key decisions such as tariff setting. However, such a model of independent regulator sits uncomfortably with the contractual tradition reflected in the concession contract, which is based on French tradition with no independent regulator. There was therefore an inherent conflict between the perception (by the Government and the CREE) that the regulator should set tariffs based on its interpretation of the broad tariff-setting principles contained in the law as opposed to the operator's perception that the tariff setting provisions contained in the private contract should take precedence.

In Zambia, NWASCO was set up as an independent regulator and has considerable discretion and powers. The presence of an independent regulator has undoubtedly provided greater sector co-ordination and helped contribute to improved sector performance and limit political interference. Decisions on tariff adjustments are not taken by a single person (such as the Minister like in other surveyed countries) but by the NWASCO Board where the representatives of the Ministries are in minority. However, NWASCO's actions have been criticised by some as being too discretionary. First, NWASCO has taken on the role of setting tariffs when it is not clear from the law that it has such powers. Its approach to tariff setting and sector regulation places perhaps more of an emphasis on "sticks" rather than "carrots", which introduces the risk of stifling incentives for real improvements.

**PSP arrangements can work well without a regulator in place, but they require other forms of monitoring and dispute resolution mechanisms**

In Senegal the PSP arrangements have worked well without the presence of an independent regulatory body. The creation of a regulatory agency for the sector was briefly considered in the context of planning the second generation of reform but this idea was discarded. Proponents of a regulatory agency argued that SONES currently faces a conflict of interest, as it needs to monitor SDE's activities which depend on its own actions, particularly because it is carrying out investments that can impact SDE's operating performance. During the current contract, a number of difficulties have emerged related to the definition of investment responsibilities. An external mediator helped resolve some of the disputes especially at the start of the contract.

**The need for monitoring institutions is also strong with public sector management, even if a full-fledged regulator is not established**

In Uganda, while the contractual arrangements within NWSC work well at present and are delivering positive results in terms of sector performance, they may need to be strengthened in a number of ways. There are a number of specific issues in particular where contract incompleteness may cause the need for additional regulatory mechanisms. The most obvious area where the regulatory framework needs strengthening relates to tariff setting as decisions are currently taken by the Minister (i.e. outside of the contractual arrangements). However, its functions could probably be limited to the role of an arbitrator, resolving contract disputes and advising on tariffs rather than setting tariffs, in order not to cut across the way the contract is currently working.

**Regulatory agencies can play an important role in providing effective sector oversight, irrespective of whether the service is publicly or privately managed.**

Overall, regulatory agencies can help ensure that incentive mechanisms work well, provided that such incentive mechanisms are in place. They can act as a focal point for the sector, gathering, analysing and publishing comparative data on sector providers. By doing so, they can improve the overall transparency of the system and help consumers become more informed about the value of the service they are receiving and improve customer protection. This has been particularly effective in Zambia, where the regulator has been publishing very good comparative data for a number of years and has established Water Watch Groups in poor areas of Lusaka and other towns that have assisted customers

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in obtaining better levels of service and responsiveness from the Commercial Utilities. Finally, regulators can also play a role in sector development by contributing their sector expertise to recommend sector improvements.

#### *How can the poor benefit from the reforms?*

##### **Standpost tariffs and small social blocks can help focus consumption subsidies on the poor**

All of the countries with the exception of Uganda have rising block tariff structures with a so-called “social block” aiming at providing cheaper water for a minimum usage. All tariff structures in the cases under review include a specific standpipe tariff which is equal to the social block tariff (if there is one) or slightly above. An optimal size for the first block (if a block structure is adopted) would usually be considered to be 6 m<sup>3</sup> per month, which would be sufficient to provide a minimum of 40 litres per capita per day to a family of 5 people.

##### **Whereas a private operator under a concession contract may have a disincentive to serve customers consuming within the first block, an affermage contract would maintain its incentives**

A potential issue with social tariffs is that they can provide a disincentive for private operators to extend into poor areas if the costs of supplying the service are not adequately covered by tariff revenues. Whether private operators are exposed to this risk or not depends upon the structure of the contract. This would typically be the case in concession contracts, such as in Mali, although in that case, the concessionaire did have quite strong coverage targets which compensated this disincentive (even though, tariff levels proved too low to be sustainable following regulatory interventions). By contrast, in Senegal, the form of private sector contract, an affermage, introduces strong incentives to serve the poor or at least, to not discriminate against serving them.

##### **Subsidising access to the service is key, either for domestic or standpipe connections**

One potential disadvantage of social tariffs is that those subsidies only benefit those who are presently connected to the system and not the unconnected, who tend to form the majority of poor people. In many cases, helping the poor is therefore likely to be better achieved through providing greater access to reticulated supplies, which in turn gives access to lower priced water services. There are a number of means of increasing coverage of water services and of improving access.

A number of the cases have subsidised connection schemes usually with qualifying criteria whilst pushing for the parallel development of stand posts /water kiosks. In Zambia, a Devolution Trust Fund was created with the aim of extending the coverage of water kiosks as the primary means of helping poor people to have access to reasonably priced water services.

##### **Coverage targets can be a powerful incentive for private operators...**

In Mali, one of the primary objectives of the concession contract was to improve coverage and there are key targets covering increasing connections (42% in 5 years and 233% in total) and increasing the volume of water sold to domestic customers. This mechanism has proven effective during the first few years of the contract although the future of the concession contract is now very uncertain. This was the only contract where the private operator had the obligation to invest in developing the network and providing new connections. With the difficulties encountered by concession contracts worldwide, it is likely that schemes where expansion is subsidised, such as Output Based Aid schemes, are going to be more effective for expanding coverage under private sector management.

##### **... But exclusivity clauses should be limited in order not to displace small-scale operators**

One critical issue in the PSP debate is whether operators should have exclusivity over service provision in their service area. This is something that the private operators often prefer in order to preserve the value of their long-term investments but the risk is that the private operators would then be tempted to expel existing small-scale suppliers who provide very useful services to the poor, at least in an interim period until coverage can be increased. This problem can be avoided by introducing limits to the exclusivity clause. In Mali the concession contract grants exclusivity to EDM over its



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service area but EDM is also required to sell water in bulk to private standpipe operators or to authorise and regularise water resale by domestic users thereby imposing limits on the degree of exclusivity.

#### *How can donor support to urban water sector reforms be improved?*

##### **Donor coordination has for the most part been improving over recent years...**

All countries involved receive financial assistance from a large number of donors, with up to 15 donors active in the water sector in many countries reviewed. In several cases, donor coordination committees have been established and in some cases, these are led by the German Development Cooperation, such as in Mali or in Kenya. In almost all countries, a move to a Sector Wide Approach (SWAp) to planning in the sector, involving all donors and the line Ministry, is being considered. This has been implemented with good success in Uganda, where the adoption of a Sector Wide Approach (SWAp) has proven effective to coordinate donors' actions. Donors have also coordinated their actions relatively well for large investment projects. For example, in Burkina Faso where the number of donors is particularly high, coordination has been particularly good for the Ziga dam project and associated investments to improve Ouagadougou's water supply. If possible, procedures (for tendering or fund disbursement) should be harmonised to reduce the level of complexity in PSP transactions.

##### **...but coordination of technical assistance remains an issue, particularly when PSP is in place**

With respect to technical assistance, coordination is sometimes more problematic however. In Burkina Faso, the multiplication of short term technical assistance contracts supporting ONEA, running in parallel with the service contract with a private operator, has proven somewhat disruptive for the service provider which was theoretically in charge of coordinating all technical assistance to ONEA. In the context of this type of private service contract, it may have been preferable to keep other forms of technical assistance down to a minimum and instead, allocate funds to the short-term investment fund or to the performance fee for the private operator so that it could deliver some of those actions.

##### **Donors have often advocated private sector participation as a critical component of overall reforms and sometimes as the main one. This may have been short-sighted in certain cases**

In many cases, donors have been pushing for a high-powered form of private sector participation (as in Mali or Tanzania) as a last resort solution to improve the sector's performance, when retrospectively it appears that the necessary conditions for such forms of PSP were not in place at the time. Donor conditionality linked to PSP has proven somewhat short-sighted in certain cases, especially when donors have pushed for higher- powered forms of PSP when the overall conditions were not favourable. Conditionality may be better focused on introducing mechanisms for improving and monitoring performance throughout the sector rather than on a particular form of PSP for the main utility in the country. This could help in improving the sustainability of the reforms, and avoid linking an entire sector-wide support program to the success of a particular transaction.

##### **Donors have not always provided ongoing support after the PSP contract was let...**

Donor emphasis on high-powered PSP arrangements has not always been followed by donor support down the line. In Mali, donor support, which had been substantial before and during the preparation of the reforms, stopped after privatisation on the basis that they could not finance a private sector operator (donor support to the sector as a whole, including to the Ministry on water resource management issues continued nevertheless).

##### **... Although such ongoing donor support, where provided, proved to be a critical success factor for PSP arrangements**

By contrast, donors have made a major contribution to the success of the reforms in Senegal by funding large and much needed investments to secure water availability and network extensions.

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Regular and coordinated joint sector and programme reviews and appraisals have helped implementing sector reform and investments programmes in a structured manner. The World Bank took the lead but other donors, and especially bilateral donors such as AFD or KfW, were also deeply involved in the process. As a result, donor contributions were well coordinated and responsive to the Government's needs and objectives. The existence of an asset-holding company, SONES, facilitated the injection of donor funds into the system in an efficient and timely way, well suited to sector needs (although delays on certain investment projects were also experienced). Donors (in a coordinated manner) have also played a very substantial role in ensuring the success of the arrangements over time, by playing a quasi regulatory role and helping in ironing out differences in views before they would risk turning into disputes. Ongoing donor support also proved key to the success of management contracts, such as in Malindi (Kenya) or Burkina Faso where donors funded most of the investments required to deliver service improvements and network extension.

#### **Donors can play a significant role to support the reform process overall and in particular, service extension in towns that fall outside the perimeter of the main operator**

There is sometimes a tendency for donors to focus on the largest projects, mostly relating to national companies or companies serving the capital city and ignoring the situation in other urban centres which may contain the majority of the urban population. For example, in Mali, it is important to note that EDM only provides services to about 10% of the Malian population (with a 60% coverage rate in towns that contain about 15% of the total population). The concession preparation process followed by ongoing conflict between the private operator and the Malian Government regarding the terms of the contract and EDM's obligations have mobilised a considerable amount of time and resources by comparison with the overall impact of EDM's contribution. The dispute is a big drain on the resources of the Ministry, donors, EDM and the regulator.

The German cooperation has put particular emphasis on maintaining a broad outlook in the water sector. In most countries reviewed, it has not only focused on the large scale private sector deals (although it usually is part of the leading group of donors) but has also been supporting overall sector reforms and service development in smaller towns. In terms of sector reform, this is demonstrated by its significant involvement in countries, such as in Uganda or Zambia, which have accomplished significant progress in terms of introducing sector reforms and incentive schemes with very limited private sector participation. In countries where private sector participation is more mainstream, such as in Senegal, the German cooperation has provided funding to water supply projects in small towns in the interior of the country, which contributed to redressing the balance between the capital city and secondary towns, given that much of the main donor funding efforts were focused on resolving Dakar's water supply problems. In Mali, German donors have sought to support the sector as a whole and support provided by KfW over the years has contributed to the development of an innovative support mechanism for small private or community operators in semi-urban centres which has brought substantial benefits.

# OVERALL FINDINGS

## 1 Introduction

KfW and GTZ commissioned this study to review the experiences of reforming the urban water sector in selected Sub-Saharan African countries (Burkina Faso, Kenya, Mali, Senegal, Tanzania, Uganda and Zambia) during the past decade and answer the following questions:

- Does PSP work in the urban water sector in Sub-Saharan Africa?
- If so, what makes it work?
- What are the benefits for the (poor) people?

The study's main objective is to assess the impact of private sector participation (PSP) on the performance of water services in the selected countries and to feed the lessons learnt back into the ongoing or starting sector reform processes in the region. Rather than being solely focused on the PSP contracts, however, the study examined the structure of the urban water sectors in which those private sector participation contracts were developed. The overall objectives therefore include:

- To summarize and compare the urban water sector structures and sector reform processes in a sample of representative Sub-Saharan African Countries;
- To describe and assess different PSP models and alternative institutional set-ups;
- To identify and derive best practice solutions, processes and general applicable principles for the introduction of PSP in the water sector in Sub-Saharan African Countries.

Note that the study focuses on urban water services only and does not analyse in detail sanitation services or rural water.

### 1.1 Background to the study

The involvement of private companies in infrastructure projects has been on the increase for the past 10 to 15 years. While some impressive success stories have been observed (especially in the telecommunication sector, some in the transport and energy sectors), the involvement of the private sector in less profitable (social) areas like the water supply sector has showed rather mixed results and has generated criticism among stakeholders. Sub-Saharan Africa, with less-developed countries hampered by a lack of sound legal systems, rampant corruption and national and regional conflicts has never been the prime destination for private investments. Nobody expected the private sector to come in with substantial investment funds, especially not in sectors like water supply, rural electrification, health and education.

The PSP debate has not, however, bypassed the African continent. Governments, with the support of donors, have initiated broad reforms of their urban water sectors with the goal of improving efficiency in service delivery, reaching financial sustainability and extending access. In several cases, PSP has been a key tenet of such reforms and a large variety of PSP models have been implemented, some with very positive results and others less so. In other cases, the mere threat of "privatisation" has led to commercialisation of inefficient state owned water utilities or to the implementation of alternative business oriented management structures.

The study chose to focus on seven countries in order to analyse the broad diversity of experiences and extract lessons from a decade of broad-sweeping reforms throughout Sub-Saharan Africa.



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### 1.2 The case studies

The seven focus countries (Burkina Faso, Kenya, Mali, Senegal, Tanzania, Uganda, and Zambia) were selected in order to include both successful and unsuccessful sector reforms and PSP models, and to include examples from both Anglophone East Africa and Francophone West Africa.

As one can see from the table below setting out socio-economic characteristics of the countries in the study, we are looking at some of the poorest countries in the world with a human development index ranging from 146 (Uganda) to 175 (Burkina Faso) (out of 177) and GDP per capita (on a Purchase Power Parity basis in 2002) ranging from \$1,580 (Senegal) to \$580 (Tanzania).

**Table 1: Socio-economic characteristics of the countries in the study (2003-04)**

| Case study          | Total Population<br>(million) | Urban<br>population<br>(million) | GDP/ capita<br>(PPP US\$ 2002) | UNDP HDI<br>Position |
|---------------------|-------------------------------|----------------------------------|--------------------------------|----------------------|
| <b>Burkina Faso</b> | 11.8m                         | 3.0m                             | 1,100                          | 175                  |
| <b>Kenya</b>        | 32m                           | 11.6m                            | 1,020                          | 148                  |
| <b>Mali</b>         | 11.6m                         | 2.7m                             | 930                            | 174                  |
| <b>Senegal</b>      | 10.5m                         | 4.2m                             | 1,580                          | 157                  |
| <b>Tanzania</b>     | 34.4m                         | 7.9m                             | 580                            | 162                  |
| <b>Uganda</b>       | 27.2m                         | 4m                               | 1,390                          | 146                  |
| <b>Zambia</b>       | 9.9m                          | 4.6m                             | 840                            | 164                  |

Source: UNDP website (<http://hdr.undp.org/statistics/data/>),

The countries under review are at different stages in carrying out reforms of their water sectors: some have gained considerable experiences with new business-oriented management styles in the urban water sector (Uganda), some have started pilot PSP experiences (Kenya) whilst others are already planning the “second generation” of reforms (Senegal).

Countries have embarked on water sector reform with different priorities and strategies and have advanced faster in certain areas but may be lagging in others. For example, reform in Zambia has first focused on institutional development, with the creation of institutions such as a national regulator or a subsidy fund whereas reform in Senegal focused on the introduction of private sector participation. As a result, the countries under review are at different points on their reform path, which makes it slightly more difficult to compare their performance but can provide insights into the sequencing of reforms.

German Development Cooperation has supported water sector reforms in all selected countries, including commercialisation and private sector participation, through technical and financial cooperation. Indeed, the water sector is one of the most important sectors for the German Development Cooperation in Sub-Saharan Africa as it is the focal sector in 9 countries. Much of the data for the study was provided by or with the help of GTZ and KfW staff and we are very grateful for their assistance in doing so and for their comments on earlier drafts of the study.

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### 1.3 Structure of this report

The report is presented in two distinct parts:

- Part I provides an overview describing the study background and objectives and setting out the main lessons learnt based on a comparative review of all seven case studies;
- Part II includes the seven case studies carried out as part of this study, including Burkina Faso, Kenya, Mali, Senegal, Tanzania, Uganda, and Zambia.

The remainder of Part I of this report is structured as follows:

- Section 2 sets out the reform processes followed in each country in the study;
- Section 3 compares the performance of the urban water sectors in the seven cases;
- Section 4 draws out key lessons for future reform and PSP design.

Part II contains the case studies presented in a common format, as well as an introductory section, with the detailed outline of the case studies, a list of main sources and a list of abbreviations. Each case study is presented in a largely standard format to aid comparisons, covering the following areas:

- Background to the country;
- Institutional reform and PSP;
- Technical and financial performance;
- Sector reform and the poor;
- The role of donors in sector reform.

For ease of reference, the case studies are presented in alphabetical order and all comparative tables and charts are also organised in this manner.

All the financial data used throughout the report was converted into Euros for ease of comparison applying the following exchange rates (source: [www.oanda.com](http://www.oanda.com), annual averages):

**Table 2: Euro exchange rates by country**

|  | Currency         | 2000-01 | 2001-02 | 2002-03 | 2003-04 |
|--|------------------|---------|---------|---------|---------|
| <b>Burkina Faso, Mali, Senegal<sup>1</sup></b> | FCFA             | 656     | 656     | 656     | 656     |
| <b>Kenya<sup>2</sup></b>                       | Shillings (Kshs) | 70      | 70      | 80      | 91      |
| <b>Tanzania<sup>3</sup></b>                    | Shillings (Tshs) | 744     | 847     | 1,067   | 1,308   |
| <b>Uganda<sup>3</sup></b>                      | Shillings (Ushs) | 1,538   | 1,563   | 1,818   | 2,273   |
| <b>Zambia<sup>5</sup></b>                      | Kwacha (ZMK)     | 2,619   | 2,780   | 4,681   | 5,729   |

1 – January to December Fiscal Year; 2 – Not available;

2, 3, 4 – July to June Fiscal Year; 5 – April to March Fiscal year.

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Finally, a number of concepts are used throughout the report to assess technical and financial performance. Performance would typically be assessed based on the operator's efficiency at delivering the service, but also on the financial health of the industry or on the environmental benefits from the service. For the purpose of this report, however, we have focused on simple and measurable indicators relating to technical and financial performance but we have not sought to examine the potentially wider impacts of water services, such as on health or on the environment for example. Key concepts used for assessing technical and financial performance are defined in the table below.

**Table 3: Definitions of concepts used for assessing performance**

| Indicator  | Definition  |
|--|---|
| <b>Technical performance</b>   |   |
| <b>UFW – unaccounted for water (%)</b>                                 | The percentage of water that cannot be accounted for after it has been input into supply. This equates to leakage and commercial losses (water that is consumed but not paid for)   |
| <b>Typical service</b>   | This refers to how many hours of service are typically received by customers.   |
| <b>Financial performance</b>   |   |
| <b>EBITDA - earnings before interest tax depreciation and accruals</b> | This is revenues less operating costs (i.e. before one removes and interest, tax, depreciation or accruals). This represents whether a company is able (or not) to cover its operating expenses.  |
| <b>Operating cost recovery ratio</b>                                   | This is the ratio of revenues to operating costs expressed as a percentage and represents whether a company is able to cover its operating costs. This ratio should of course exceed 100%.  |
| <b>Capital cost recovery ratio</b>                                     | This is the ratio of revenues to capital costs where capital costs are defined as operating costs plus depreciation/amortisation plus interest expenses plus dividend payments. This ratio should of course exceed 100% in the longer run otherwise a company is not covering its capital expenditures. This may also be referred to as overall or full cost recovery, although the definition of “full cost” can be controversial. |
| <b>Net trade receivables (months)</b>                                  | This is the ratio of trade and other receivables to revenues and represents the number of months of outstanding receivable the business has.  |
| <b>Current ratio</b>   | Is the ratio of current assets to current liabilities and represents a company's liquidity. A ratio of less than 1 implies the company is not able to meet its current liabilities.   |
| <b>Adjusted current ratio (removing interest payments)</b>             | This ratio adjusts the current ratio by removing interest payable from liabilities. This illustrates the underlying level of liquidity where a company might be saddled with a lot of historical debt (as is the case for Uganda).  |
| <b>Debt to equity ratio</b>  | This is the ratio of debt (expressed as current borrowings plus interest on borrowings plus non current borrowings) to equity (total capital and reserves). Where this exceeds unity, it illustrates that a company is highly indebted.   |
| <b>Debt service coverage ratio</b>                                     | This is the ratio of EBITDA to interest expenses plus principal repayments. Where this is less than 1, it illustrates a situation where a company is struggling to meet its debt repayments.  |

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## 2 What reforms have been carried out?

This section provides a brief overview of the reforms that have been carried out in the urban water sectors in the seven countries under review over the last 10 years and presents the main characteristics of those sectors in each country. A summary is presented in Table 4 below.

The main objectives of urban water sector reforms are usually to improve the efficiency of service provision, to expand access to the service and to improve financial sustainability. Over the last decade, it has been a commonly held view (particularly amongst the donor community) that the best way to meet those objectives was through carrying out two main types of reforms, in no specific order:

- *Overall sector reforms* – including market structure reform to reach a more efficient scale for operation, the adoption of a legal and regulatory framework establishing clear separation between policy making, regulation and operations functions and tariff reform;
- *Introduction of private sector participation (PSP)* – from the most limited forms (service or management contracts) to the most extensive (affermage or concession).

The seven Sub-Saharan African countries under review are no exception.

Figure 1 below shows in a schematic way the types of reforms that the seven countries have carried out so far, divided between overall sector reform and private sector participation. The figure on the left hand side shows the typical menu of reform packages that can be introduced, ranging from limited to extensive on both axis (overall sector reforms and PSP). The figure on the right hand side positions the seven countries, together with an assessment of whether the PSP contracts have been successful or not. In stark green, we represent the star performer (Senegal) and in light green those that have performed reasonably well (although usually on a more limited scale, such as the service contract in Burkina Faso or the management contracts in Malindi or in Kampala, Uganda). In stark orange, we show the contracts that have experienced or are experiencing serious difficulties (Tanzania, which has just been terminated and Mali, which has been in crisis since its inception and where the probability of early termination is also very high).

Figure 2 places those reforms on a timeline so as to show the timing of the reforms and the type of contract that was retained at different stages. The arrows show the length of the contract, the green stars the successful or planned renegotiations (shown with a question mark if only planned) and the orange symbol shows those contracts that were terminated early. Out of the several PSP contracts signed in the countries under review, only two were terminated early: the management contract in Mali in 1998 and the lease contract in Dar es Salaam (Tanzania) in early 2005 but the future of the Mali concession is also very uncertain.

The overall observation stemming out of these schematic representations is that there is not a standard way of approaching the sector reform/PSP combination. The combination that was pushed for in the early 1990s (high powered private sector contract combined with regulatory reforms), which was implemented in Mali for example, has experienced difficulties whereas more limited PSP combined with sector reforms to improve incentives has yielded reasonable results (as in Uganda for example).

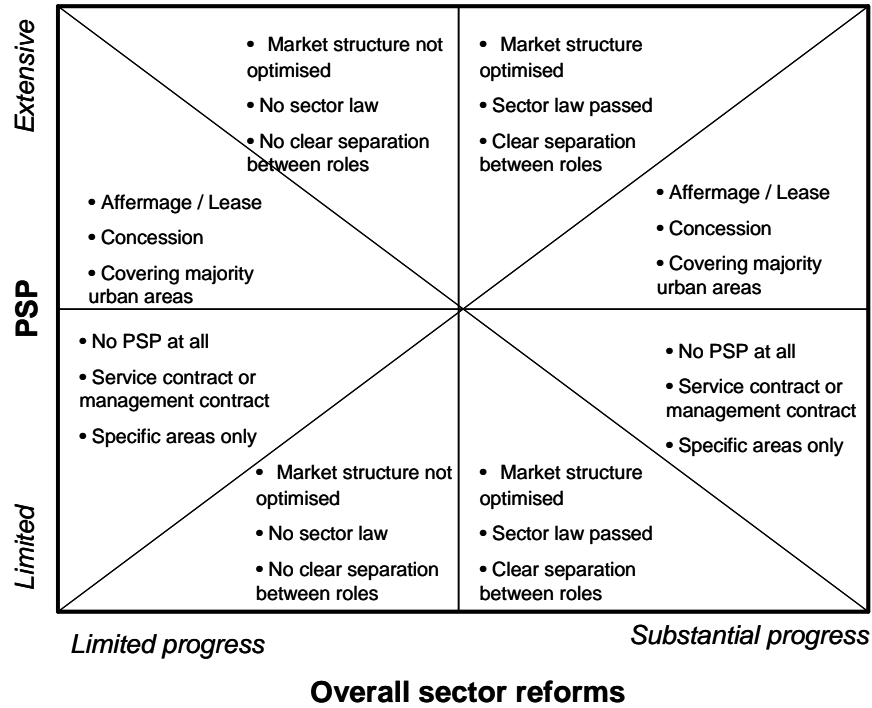
Another key point to bear in mind is that the countries under review are at very different stages of their reform process: for example, Kenya has only introduced limited private sector participation whereas Senegal is already planning the second stage of reforms, with the ongoing 10-year affermage contract coming to its end in March 2006.

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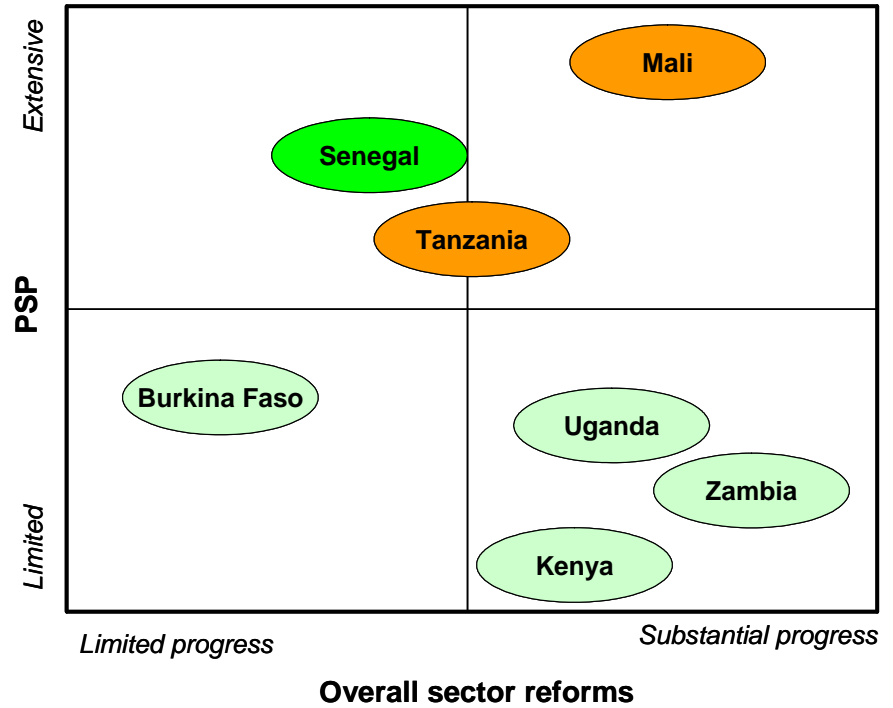
## PSP in urban water supply in Sub-Saharan Africa

Figure 1 – Schematic representation of sector reforms and PSP processes in the seven case studies

### Criteria for evaluation



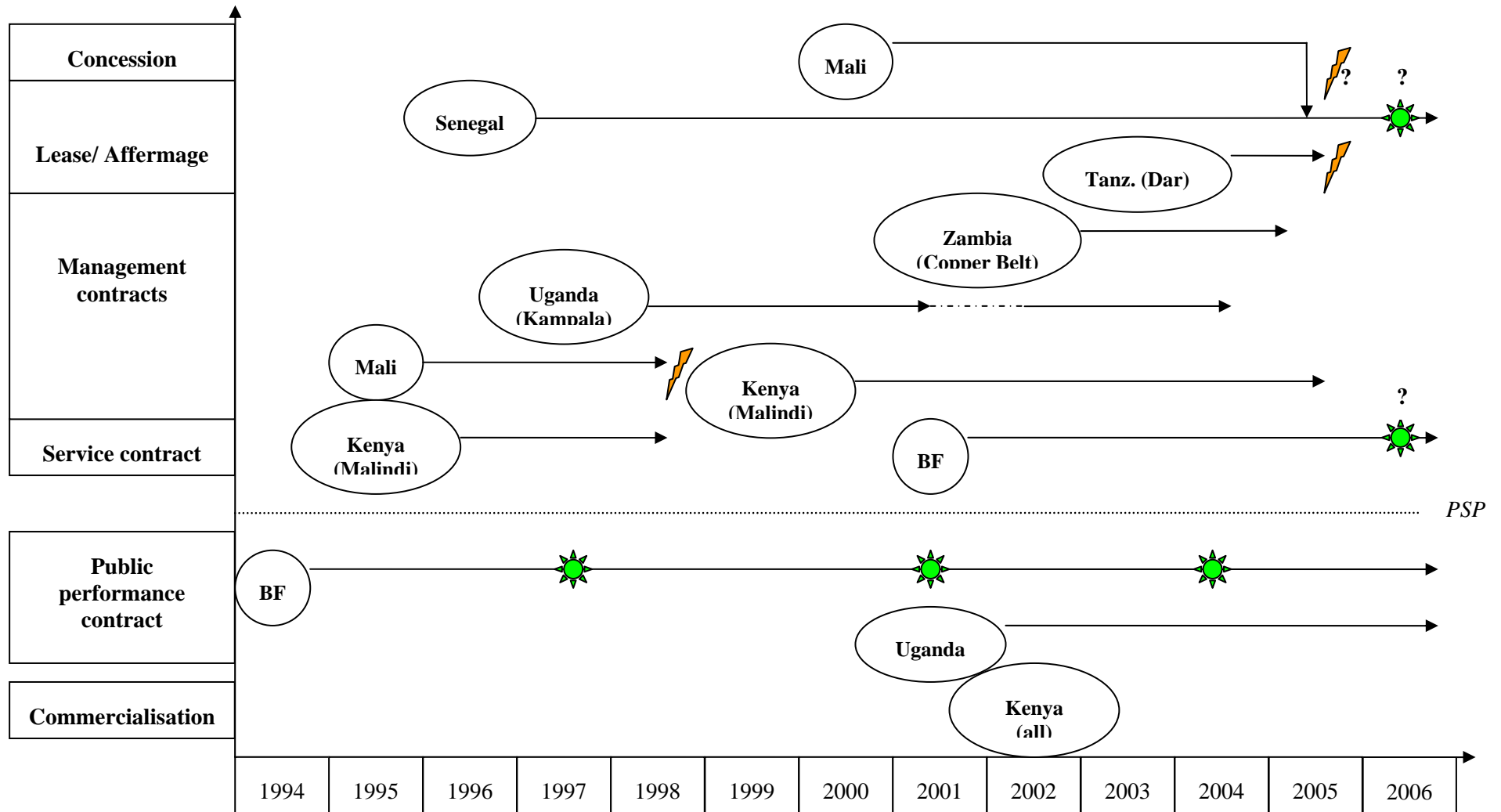
### Approximate location of case studies



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Figure 2 - Contracting timeline



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**Table 4: Overview of urban water sector reforms in the case studies**

| Case study          | Sector structure  | Overall sector reforms   | PSP experiences  |
|---------------------|---|--|--|
| <b>Burkina Faso</b> | A national operator, ONEA, provides water and sanitation services to 41 urban centres comprising 20% of the population. Water services are mostly provided through standpipes (50% of served population in the capital Ouagadougou). The rest of the country is served by community providers.  | Reforms have mostly focused on improving the performance of the public operator through internal reforms, with the signing of performance contracts between ONEA and the State since 1994. In addition, limited PSP has been pushed by donors since 1999 in the context of a program to increase water supplies to the capital Ouagadougou.  | <b>Limited form of PSP at national level, with reasonably good results.</b> The national company ONEA signed a 5-year service contract with Veolia and Mazars & Guérard in 2001 to improve its commercial and financial management.  |
| <b>Kenya</b>        | The delivery of water supply and sanitation services used to be fragmented into various regimes under the direct responsibilities of the Ministry of Water & Irrigation (MWI), the corporatised National Water Conservation and Pipeline Corporation (NWCPC) and Local Authorities as well as numerous community-based organizations. Following reforms initiated in 1999, responsibility for service delivery is in the process of being transferred from MWI and NWCPC to seven Water Service Boards (WSB) and the Local Government schemes are requested to also lease their assets to the WSB. Most of the Boards have appointed Water Service Providers in the larger urban areas and will appoint water service providers for smaller towns and rural areas (Community Based Organisations, Water User Associations, etc) | Reforms started in 1999 with the adoption of a national water policy. In 2002, a Water Act was enacted aimed at providing for a harmonised and streamlined management of water resources and water and sanitation services. The key principles of the Act were: <ul style="list-style-type: none"> <li>• Separation of water resources management from water service provision;</li> <li>• Separation of roles between policy, sector regulation, asset holding, and operations</li> <li>• Decentralisation, with the creation of seven regional water services boards holding assets;</li> <li>• Creation of a national-level regulator, the Water Services Regulatory Board (WSRB).</li> </ul> | <b>PSP limited to a small geographical area, but overall successful.</b> In a small town (Malindi), a 3½ year O&M and billing contract from 1995 with Gauff Consultants was followed by a 5 year management contract from 1999, which is set to expire by the end of 2005. Although PSP options have been studied for other towns (Nairobi, Mombassa and Kisumu), nothing has materialised so far. |

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| Case study      | Sector structure   | Overall sector reforms  | PSP experiences  |
|-----------------|--|---|--|
| <b>Mali</b>     | Services are provided by a national operator, Energie du Mali (EDM) in 16 major urban centres, comprising between 15-20% of the population. EDM also provides electricity services (which account for 80% of its total turnover). In 2000, those 16 centres comprised between 15% and 20% of the population and Outside of EDM's perimeter (49 urban centres) municipalities are in charge of providing water services. They are required by law to delegate the right to provide the service to a private operator or a user association.   | Sector reforms have focused on the introduction of PSP to improve EDM's poor performance, first through a management contract in 1995 (terminated early) then through a concession from 2000. Letting of the concession was accompanied by the adoption of a sector law, creating a sector regulator.   | <b>Extensive but largely negative experience with PSP.</b> A twenty year water and electricity concession for EDM started in 2000 and is currently under renegotiation. Previous management contract let in 1995 was terminated early.   |
| <b>Senegal</b>  | Water services in 56 main urban centres are provided by a national operator, Sénégalaise des Eaux (SDE) operating under an affermage contract. Assets are owned by a public asset-holding company (SONES - Société Nationale des Eaux du Sénégal). Water services in rural areas and small towns are under the overall responsibility of the Water Ministry, which has tried to introduce an increasing degree of participation from villagers in the management of these water points, through the formation of village water committees and delegation contracts with small-scale operators. | Sector reforms started in 1995 and entailed splitting the existing national utility, SONEES, into three entities. A public asset-holding company was set up and became in charge of managing and investing in water service assets in the 56 urban centres previously served by the public utility. The government simultaneously signed a 10-year affermage contract with a private operator, SDE. The sector legal framework is very succinct and there is no regulator in place. | <b>Significant and successful PSP experience.</b> A ten year affermage contract for water services began in April 1996 and is now likely to be extended for a further 5-year, under slightly different terms. Performance contracts between the State and two publicly-owned entities (SONES and ONAS) are likely to be signed and the powers of a Contract Monitoring committee reinforced to oversee the sector. Private sector participation in sanitation services is also being considered but only at a later stage. |
| <b>Tanzania</b> | The 20 largest towns (excluding Dar Es Salaam) are supplied by Urban Water Supply and Sewerage Authorities (around 38% of urban population) and District Urban Water and Sewerage Authorities are responsible for supplies elsewhere.  | The new Water Supply and Sanitation Bill, likely to be enacted shortly, will provide for the establishment of water supply and sanitation authorities, which may include more than one local authority. The Water Authorities are to be regulated by a regulator, EWURA.  | <b>PSP experience in capital city terminated early.</b> Lease contract in Dar es Salaam since August 2003, terminated by the Government in May 2005 due largely to poor operator performance.  |



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| Case study    | Sector structure   | Overall sector reforms   | PSP experiences  |
|---------------|--|--|--|
| <b>Uganda</b> | The National Water and Sanitation Corporation (NWSC) is responsible for water supply in 15 out of 41 large towns, home to about 55% of the urban population. Local governments provide water services in the remaining town, supported by the Ministry. A substantial number of these towns have private local operators managing the water operations.  | The urban water sector under NWSC management has experienced a continual process of reform culminating in Internally Delegated Area Management Contracts between NWSC head office and area offices.  | <b>Limited PSP contracts at national level with mixed results, small PSPs contracts in small towns.</b> Within NWSC's perimeter, two year management contract in the capital Kampala (2002-04) operated by Ondeo. Not extended to a 3 <sup>rd</sup> year. Outside NWSC's perimeter, 13 local private operators provide services under short term management contracts covering a total of around 10,000 connections. |
| <b>Zambia</b> | There are four main types of service providers: <ul style="list-style-type: none"> <li>• Ten commercial utilities provide services in 50 towns, covering service areas with about 85-90% of the urban population.</li> <li>• Twenty three local authorities providing the service directly, through internal departments supposed to operate in an autonomous manner. These local authorities are in transition and supposed to establish a commercial utility soon.</li> <li>• Private schemes, whereby companies are providing water services to their own employees, particularly in mining areas.</li> <li>• Decentralised community schemes.</li> </ul> | The Government initiated sector reforms in 1993 to separate roles and functions of policy making, service provision and regulation. This reform process culminated into the adoption of the 1997 Water Supply and Sanitation Act. The main provisions of the Act included: <ul style="list-style-type: none"> <li>• The establishment of a regulator for water and sanitation services (NWASCO);</li> <li>• The commercialisation of water utilities by Local Authorities ; and</li> <li>• The licensing of utilities or service providers by NWASCO and provisions for the regulation of licensed utilities.</li> </ul> | <b>Limited PSP with good results.</b> One management contract on the Copper Belt operated by SAUR. PSP has been considered for some time in Lusaka but limited prospects at present.   |

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The rest of this section presents a short summary of the reform processes in each country under review. For more details, readers should look at the case studies in Part II of this report.

#### 2.1 Burkina Faso: public management and service contract

The water sector in urban areas of Burkina Faso is dominated by the National Water and Sanitation Authority (ONEA), a limited liability company (*Société d'Etat*) with legal autonomy, which is responsible for producing and distributing drinking water to the population in urban centres of more than 10,000 inhabitants. It covers a total of 41 urban centres and has been operating under three-year performance contracts (*Contrat plan*) signed with the Government since 1994.

In general, ONEA is viewed as a reform minded and relatively efficient organization. However, service coverage has remained particularly low, with only 20% of the population in ONEA's service area having access to a domestic connection. This has been partially compensated by ONEA's active policy of developing standpipe supplies, which supply an additional 50% of the population in the service area. However, standpipes are inadequately distributed throughout the service area, which means that water resale activities are particularly developed to serve those who are further away from the standpipes whilst those who cannot afford such services spend a considerable amount of time fetching water. In addition to this low coverage, ONEA's commercial and financial performance has traditionally been perceived as being the institution's weak point, as opposed to its relatively good technical performance, with leakage rates as low as 15% and reliable service.

The reform process was driven by donors providing finance for the Ziga dam, a major investment to increase water supplies to the capital city Ouagadougou. Donors placed a number of conditions on efficiency and financial improvements for their involvement in this support program. One such condition was that ONEA would enter into a service contract for commercial management and the strengthening of financial and accounting information with an international water operator in association with an accountancy firm. In 2001, a five-year service contract was granted to a joint venture between an international water company (Veolia) and an international auditing firm (Mazars & Guerard). The partnership mainly focuses on the strengthening of the commercial management and the financial and accounting operations of ONEA. However, the ability of the private operator to deliver change has been severely curtailed by some limitations imposed by ONEA's management.

Outside of ONEA's service area, the Government has defined strategies for the semi-urban (population centres from 2 000 to 10 000 inhabitants) and the rural sectors (centres of less than 2 000 inhabitants) separately. In semi-urban centres, the Government is seeking to encourage private sector participation in maintaining and managing rural water systems. In villages with population less than 2,000, the Government's policy has been to encourage community participation, mainly through grants with donor support.

#### 2.2 Kenya: limited commercialisation and overall sector reform

Kenya's water sector has experienced a continual process of reform in recent years since the adoption of a national water policy in 1999. In 2002, a Water Act was enacted aiming at providing for a harmonised and streamlined management of water resources and water and sanitation services. The Act provides for the involvement of the private sector in water services and allows communities to run water projects. It further spells out institutional reforms that separate water resources management from water services provision. The key principles of the Act are:

- Separation of water resources management from water service provision;
- Separation of roles between policy level, sector regulation, asset holding, and operations;

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- Devolution of responsibility for water supply and sanitation services provision, from the Ministry of Water and Irrigation (MWI), the National Water Conservation and Pipeline Corporation (NWCPC), and others, to seven Water Service Boards, local authorities, communities, private sector and other actors;
- Decentralisation of powers by creating catchment area level operations of the water resources management authority.

The Act provided for the establishment of a Water Services Regulatory Board (WSRB) (overseeing water services provision and licensing); seven Water Services Boards (WSB) (responsible for water and sanitation services provision and asset development) and a Water Services Trust Fund (WSTF) to facilitate financing of water development in rural and low income urban areas. The WSRB and the WSTF were established in March 2003 and all seven WSBs in 2004.

The Water Act also mandates the commercialisation of water services, which means that the WSB should not provide services directly but contract Water Services Providers (WSPs) as their agent to deliver services to customers. Those WSPs may be established by local governments as limited liability companies run on a commercial basis which are then contracted by the WSBs.

The main experience with PSP in Kenya is in Malindi (the 12<sup>th</sup> largest town). An O&M and billing service contract consisting of supervision of meter reading, billing, revenue collection, and operation and maintenance was put in place in 1995. NWCPC, the national water company which was in charge of the service previously, commissioned Gauff Consulting Engineers through a typical design and supervision consultancy contract. Initially, the service contract period was seven and half months. Services to be provided by the consultant included meter reading, billing, revenue collection, and operation and maintenance. The contract was later extended on ad hoc basis and lasted for a total of 3.5 years before it was let to lapse. Performance deteriorated after NWCPC regained management of the system: for example, revenue collection, which had improved markedly under private management deteriorated as NWCPC staff could not handle the new billing system that had been installed exclusively for Malindi. In order to utilise the experience gained by the consultant during the service contract and due to the urgency of improving service levels, NWCPC awarded a five-year management contract to the same consultant in January 1999. The contract was based on a technical and financial proposal submitted by the consultant. The management contract was more output based than the previous service contract and so far the project has been ranked as a major success in terms of the improvements it has delivered.

In 2002 the Government of Kenya secured financing from the World Bank to investigate options for private sector participation (PSP) in water and sewerage services in Nairobi, Mombassa and Kisumu. Both the Nairobi and Mombassa studies recommended a lease option while the Kisumu study recommended more of a commercialisation approach with the city council owned company hired to run the system. Private sector participation however is currently limited with Nairobi City having three private water undertakers serving Runda Estate, Rosslyn Estate and Wilson Airport.

### 2.3 Mali: the limits of the concession model

Water services in urban areas of Mali are provided in two main ways. In 16 major urban centres, services have traditionally been provided by a national operator, Energie du Mali (EDM), which also provides electricity services (which account for 80% of its total turnover). In 2000, those 16 centres comprised between 15% and 20% of the population and EDM's service coverage was around 60% within this perimeter, a large proportion of which is through standpipes (40% in Bamako). Outside of EDM's perimeter (a total of 49 urban centres, 22 with more than 10,000 inhabitants and 27 smaller ones but with administrative responsibilities), municipalities are in charge of providing water services and they are required by law to delegate the right to provide the service to a private operator or a user association. In rural areas, rural water points are developed by user associations.

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In late 2000, the Government of Mali signed two 20-year concession contracts with the national water and electricity operator, EDM, and simultaneously sold a 60% of its capital to a consortium led by SAUR International. The main objective of the contract was to significantly expand access to those services (within the existing service perimeter for water and with an expansion to additional urban centres for electricity) and to improve EDM's technical and financial performance. Prior to the reforms, the company had suffered from years of under-investment and inefficient management, and was in a critical financial position. A previous attempt at introducing private sector participation through a management contract let in 1995 was terminated prematurely at the agreement of both parties. The management contractor, SHEC (a consortium led by SAUR International), had been unable to achieve its performance improvement targets, due to a combination of factors.

Under the concession contract, EDM is in charge of operations and all necessary investments in its service area. The DNH (*Direction Nationale de l'Hydraulique*) within the Ministry of Mines, Energy and Water has general contract monitoring responsibilities and the Commission for Regulation of Electricity and Water (CREE), established in March 2000 through the sector reform law carries out economic regulation (including tariff setting).

Conflicts between the parties have emerged almost immediately following contract signing and have led to a vicious circle of mutual accusations and uncooperative behaviour. Most of the problems were initially related to the electricity sector and were partly due to poor contract design, especially with respect to tariff setting formulas. Early into the contract, the authorities started to criticise insufficient performance by the concessionaire. The concessionaire was unable to raise long-term finance to fund its investment obligations and a series of tariff cuts (at first, with financial compensation to the concessionaire and then without) compromised its ability to do so. As a result, the concessionaire slowed down investments considerably, leading to accusations of unsatisfactory performance.

The parties have long been seeking a compromise solution. They initiated contract renegotiation procedures under the auspices of the World Bank and contemplated moving towards an affermage contract (along the lines of what was successfully done for water in Senegal), at least for the water sector and possibly for electricity as well. Despite those efforts, the probability of contract termination is still high as various rounds of negotiations have not led to a satisfactory conclusion. Finagestion (the successor of SAUR International) is looking to sell its share in the joint-venture and to withdraw.

## 2.4 Senegal: a successful public-private partnership

In 1995, the Government of Senegal initiated major reforms in the urban water sector. The Government adopted a step-wise approach to reform, introducing limited private sector participation through a 10-year affermage contract, and leaving open the possibility of moving to a concession model at the end of the contract.

The reforms in 1995/96 entailed splitting the existing national utility, SONEES, into three entities. A public asset-holding company (SONES - Société Nationale des Eaux du Sénégal) was set up and became in charge of managing and investing in water service assets in the 56 urban centres previously served by the public utility. The government simultaneously signed a 10-year affermage contract with a private operator SDE (Sénégalaise des Eaux), which is majority owned by SAUR International. According to this contract, SDE became responsible for operating and maintaining water services in the same urban centres, and acquired some limited and well-specified investment responsibilities. The affermage contract contains a number of performance targets, particularly with respect to loss reduction, bill collection, water quality and customer service and contains some limited investment obligations. Those targets have driven SDE's activities, especially as some of them are linked to financial incentives and penalties, and resulted in remarkable performance improvements. The contractual framework carefully allocated responsibilities between SONES and SDE, and SONES was able to carry out an ambitious investment programme to improve water availability and expand

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coverage with donor funding. The contract is widely considered as a success and the parties have started negotiating a 5-year extension to the existing contract with marginal modifications.

The reforms also entailed separating responsibilities for water and for sanitation. Operations and investment of sanitation services in six major urban centres were transferred to a public company, ONAS (Office National d'Assainissement Urbain). At the time, it was considered that private sector participation could not be introduced in sanitation services as yet, but that strong public management could help bridge the gap with water services in order to open the way for a performance-based contract for sanitation or a combined contract at a later stage.

Water services in rural areas and small towns remained under the overall responsibility of the Water Ministry, which has tried to introduce an increasing degree of participation from villagers in the management of these water points, through the formation of village water committees and the signing of delegation contracts with small-scale operators.

## 2.5 Tanzania: sector improvements despite a troubled lease

Reforms were initiated in 1997, with the adoption of a legal framework which led to the break up of NUWA (the National Urban Water Authority) and the establishment of 20 Urban Water Supply and Sewerage Authorities (UWSAs) for the 20 regional centres in Tanzania. These UWSAs are responsible for the provision of water services in the urban areas they cover. The total population of the UWSAs is around 3 million people i.e. around 38% of the total urban population. In addition 49 District Urban Water and Sewerage Authorities (DUWSAs) were established for the smaller towns.

Water and sanitation services in the capital Dar es Salaam have been managed independently from the rest of the country since the early 1980s and the Dar es Salaam Water and Sewerage Authority (DAWASA) was established by separate legislation in 2001. DAWASA serves around 3 million people i.e. around 38% of the urban population of Tanzania and is therefore similar to the population served by the UWSAs. In 2003, DAWASA entered into a ten year lease contract with City Water Services, a private local company formed as a joint venture between Biwater (United Kingdom), HP Gauff (Germany) and a local Tanzanian company, Superdoll Trailer Manufacturers Ltd. (STM). City Water started its operations in August 2003 but the contract was terminated early in May 2005. City Water was responsible for billing, tariff collection and operations and maintenance. The rehabilitation and development of the whole system remained under the responsibility of DAWASA with the proceeds of a €131 million loan from the World Bank, the European Investment Bank, and the African Development Bank. Out of this, €2 million was used to subcontract City Water to undertake specific works. In May 2005, the Government announced that they are terminating the lease contract principally because of City Water's poor performance and a new company, the Dar es Salaam Water and Sanitation Corporation (DAWASCO) has been established to take over the operations.

A new Water Supply and Sanitation Bill is likely to be enacted shortly, which provides *inter alia* for:

- The establishment of clustered water supply and sanitation authorities (which will be corporatised entities) by the Minister. The area of responsibility of a water authority established may include the administrative boundaries of one or more local government authorities;
- The ability of a licensed water and sanitation authority to allow for services to be provided by an agent i.e. a service provider.
- Placing water authorities under the regulatory supervision of the Energy and Water Utilities Regulatory Authority (EWURA), which has already been established for energy.



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## 2.6 Uganda: an incentive framework under public management

The National Water and Sewerage Corporation (NWSC), a wholly state owned utility established in 1972, supplies water and sanitation service to 15 of the 41 large towns in Uganda. Approximately 55% of the urban population lives in the 15 towns supplied by NWSC or around 75% of the population in the large towns. For the remaining towns, local government provides water services supported by the Directorate of Water Development (DWD) within the Ministry of Water, Land and Environment. The majority of these towns have private operators managing the water operations with a number of local Ugandan firms operating under short term management contracts. This accounts for around 10,000 connections.

The urban water sector under NWSC management has experienced a continual process of reform beginning in 1998 beginning with the so-called 100-days program (February–May 1999) and the Service and Revenue Improvement Programme (August 1999–August 2000). To improve performance further, the NWSC headquarters entered into Area Performance Contracts (APCs) with its area offices utilities to increase managerial autonomy, introduce performance incentives and hold the area offices to account for their performance. These contracts with NWSC were one-year renewable contracts and were in effect for three consecutive years (2000-2003). This model of public contracts distinguished Uganda from the other cases in this study.

During the implementation of the above internal reforms, a so-called “stretch out” program was also introduced after it was realised that there were still some operational constraints that required improvements if NWSC were to meet its objectives as set out by Government (i.e. as set out in the Performance contract signed in 2001 between NWSC and Government).

NWSC is currently implementing Internally Delegated Area Management Contracts (IDAMCs) as part of its 2003-06 corporate plan. These contracts differ from the earlier Area Performance Contracts by assigning more operating risk to area offices. The main principle of IDAMCs is to provide strong incentives for improved performance through an incentive mechanism linked to five key areas of performance.

In addition to these reforms there have been two PSP contracts in place in recent times in the form of management contracts in the Kampala Water Supply Area. Kampala’s first management contract, the Kampala Revenue Improvement Project (KRIP), was for three and a half years from 1997 to 2001 and was undertaken by JBG Gauff, a German consulting firm based in Uganda. The second management contract was for only two years from 2002 to 2004, and was undertaken by ONDEO Services Uganda Limited (OSUL), a French water firm registered in Uganda which the two contract parties (ONDEO and the Ugandan Government/NWSC) decided not to extend.

## 2.7 Zambia: sector reform and national regulation

The institutional framework for the urban (and rural) water and sewerage sector in Zambia has changed and developed significantly since the mid 1990s when a series of reforms were undertaken. This culminated in the adoption of the Water Supply and Sanitation Act in 1997. The main provisions in the new Act were as follows:

- The establishment of the National Water Supply and Sanitation Council (NWASCO) as the independent regulator for the water (and sanitation sector), which was finally established in October 2000. After three years of operation, key elements of the regulatory regime are in place.
- The commercialisation of water utilities by Local Authorities. The objective being to outsource the management of water and sanitation services to institutions staffed with professional and competent people, on the basis of ultimately achieving full cost recovery and economic viability in the longer term.

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- The licensing of utilities or service providers by NWASCO and provisions for the regulation of licensed utilities.

Since the Act, there has been considerable growth in the number of Local Authorities/Towns where water services are operated by Commercial Utilities. There are now 39 licensed utilities in Zambia, including 23 “fully” licensed utilities with 10 year licences. This comprises 10 Commercial Utilities plus 7 private operators and 6 Local Authorities. There are an additional 16 Local Authorities with so-called provisional licenses. The provisional licences are issued where data is not fully available to warrant receiving a “full” licence.

In addition, 22 Local Authorities (LAs) continue to provide water supply and sanitation services in four provinces. These councils supply water and sanitation services directly to consumers through their departments of water and sewerage.

There has been relatively little PSP in the urban water sector in Zambia compared to a number of the other countries assessed in this study. While the reform process was being undertaken, the Government decided to privatise a number of industries including the mining sector where the previous mining operator had provided water services. In an area in the Copper Belt, the private operator who bought the mines did not wish to provide water and sanitation services and the newly established CU in this area was not ready to manage the water and sanitation facilities to the same level of efficiency. A management contract was therefore established with SAUR International after a comprehensive transaction process which was supported by the World Bank.

Other smaller private operators provide water supply and sanitation services to their employees. Generally these are located in isolated places with small populations and/or where no local authority provides a service and where they have a large population of workers to whom they provide housing and other social services.

PSP studies have been conducted for Lusaka financed by the World Bank to review the most appropriate PSP option but as yet this has not progressed to the stage of proceeding with a transaction.

In the following sections, we analyse the comparative performance of the urban water sectors in the seven countries in more details and try to link this analysis back to the choice of management models in order to draw out lessons for future reform design.

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## 3 How are the sectors performing now?

This section compares how urban water sectors are currently performing in each of the countries under review. Even though each country has followed its own reform path and may be at a different stage of the reform process, comparing performance at a given point in time allows us to evaluate whether performance in a particular country is above average or whether it is lagging behind and to identify examples that may be worth emulating or avoiding. Table 5 provides a summary of this data for ease of comparison.

In this section, we only make brief comments about whether a particular performance is satisfactory or not: the next section seeks to link performance data with sector reforms so as to extract key lessons for reform design and the case studies in Part II analyse performance drivers and changes over time in each country. Note however that this study concentrates only on recent data and did not seek to track each country's progress over the full reform period by gathering "before" and "after" reform data.

Due to incomplete data, comparisons are based on data that does not necessarily cover the entire urban water sector but only the main urban areas or even the capital city, which is where most reform efforts have often been focused anyway. Therefore, please note that in the following tables and charts:

- For **Burkina Faso, Mali** and **Senegal**, the data provided is for the area served by the national utilities operating in each of these countries, i.e. ONEA, EDM and SDE respectively. EDM's financial data has been adjusted to reflect that the water activity only represents about 20% of total revenues and costs: this ratio is relatively rough due to the lack of analytical accounts.
- For **Kenya**, data is very limited, which is a point we pick up on in the case study itself. Comparisons are based on data for Nairobi City Water and Sewerage Company (NCWSC). Additional data was available for other towns but not in a comprehensive manner: readers should therefore refer to the detailed case study for this additional data.
- For **Tanzania**, we are reporting two figures: one for the capital Dar es Salaam (DAWASA) and the other for the remainder of the urban sector (the 19 UWSAs). This reflects the fact that more data was available for Dar es Salaam, making separate reporting more informative.
- For **Uganda**, data reported is only for the national company, NWSC.
- For **Zambia**, average data for the 10 Commercial Utilities is presented, as reported by NWASCO.

Note that because of these differences in service areas, the data may not always be directly comparable: for example, the number of connections or level of revenues would vary largely in line with the size of the population covered rather than with the efficiency of the operations. It is therefore provided here for indicative purposes only.



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Table 5: Summary data from the case studies: performance and physical comparators

| Technical performance       |                        |                            |                       |               |                         |                       |                       |                                 |
|-----------------------------|------------------------|----------------------------|-----------------------|---------------|-------------------------|-----------------------|-----------------------|---------------------------------|
|                             | Number of towns served | Population in service area | Number of connections | Coverage rate | Staff/1,000 Connections | UFW                   | Collection Rate       | Opex/ connection/ year (€)      |
| <b>Burkina Faso (ONEA)</b>  | 41                     | 2,562,786                  | 71,242                | 72%           | 9.7                     | 15%                   | 72%                   | 242                             |
| <b>Kenya (NCWSC)</b>        | 1                      | 2,100,000                  | 158,000               | 88%           | 12.0                    | 51%                   | 63%                   | 213                             |
| <b>Mali (EDM)</b>           | 16                     | 2,013,039                  | 82,755                | 60%           | 5.9                     | 32%                   | 94%                   | 196                             |
| <b>Senegal (SDE, SONES)</b> | 56                     | 4,902,959                  | 359,893               | 84%           | 3.2                     | 20%                   | 98%                   | 167                             |
| <b>Tanzania (DAWASA)</b>    | 1                      | 3,000,000                  | 103,782               | 70%           | 14.8                    | 55%                   | 60%                   | 162                             |
| <b>Tanzania (UWSAs)</b>     | 19                     | 2,990,962                  | 137,595               | 77%           | 13.6                    | 46%                   | 80%                   | 92                              |
| <b>Uganda (NWSC)</b>        | 15                     | 2,101,870                  | 100,475               | 65%           | 10.0                    | 38%                   | 101%                  | 132                             |
| <b>Zambia (10 CUs)</b>      | 10                     | 3,597,877                  | 219,336               | 72%           | 9.9                     | 50%                   | 74%                   | 97                              |
| <b>Average</b>              |                        | 4,000,916                  | 188,135               | 73%           | 9.9                     | 38%                   | 80%                   | 162                             |
| Financial performance       |                        |                            |                       |               |                         |                       |                       |                                 |
|                             | Reporting year         | Total Revenues             | Average Tariff        | EBITDA / m3   | Operating cost recovery | Capital cost recovery | Net trade receivables | Revenues / connection/ year (€) |
| <b>Burkina Faso (ONEA)</b>  | 2002-03                | 23,286                     | €0.53                 | €0.18         | 135%                    | 88%                   | 5.49                  | 327                             |
| <b>Kenya (Nairobi)</b>      | 2004-05                | 40,154                     | €0.54                 | n.a.          | n.a.                    | n.a.                  | n.a.                  | 254                             |
| <b>Mali (EDM)</b>           | 2002-03                | 21,841                     | €0.44                 | €0.15         | 135%                    | 93%                   | 6.05                  | 264                             |
| <b>Senegal (SDE)</b>        | 2003                   | 69,802                     | €0.66                 | €0.28         | 158%                    | 104%                  | 4.68                  | 194                             |
| <b>Tanzania (DAWASA)</b>    | 2002-03                | 18,634                     | €0.13                 | €0.01         | 111%                    | 90%                   | 6.26                  | 180                             |
| <b>Tanzania (UWSAs)</b>     | 2002-03                | 12,544                     | €0.16                 | €0.00         | 99%                     | n.a.                  | 5.9                   | 91                              |
| <b>Uganda (NWSC)</b>        | 2003-04                | 18,752                     | €0.47                 | €0.16         | 141%                    | 91%                   | 4.32                  | 187                             |
| <b>Zambia (10 CUs)</b>      | 2003-04                | 15,164                     | €0.10                 | -€0.04        | 71%                     | n.a.                  | n.a.                  | 69                              |
| <b>Average</b>              |                        | 27,522                     | €0.37                 | €0.10         | 121%                    | 93%                   | 5.45                  | 195                             |

Note that Mali data is based on an estimate of the share of water - taken to be 20% of total revenues and costs

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## PSP in urban water supply in Sub-Saharan Africa

### 3.1 Comparing technical performance

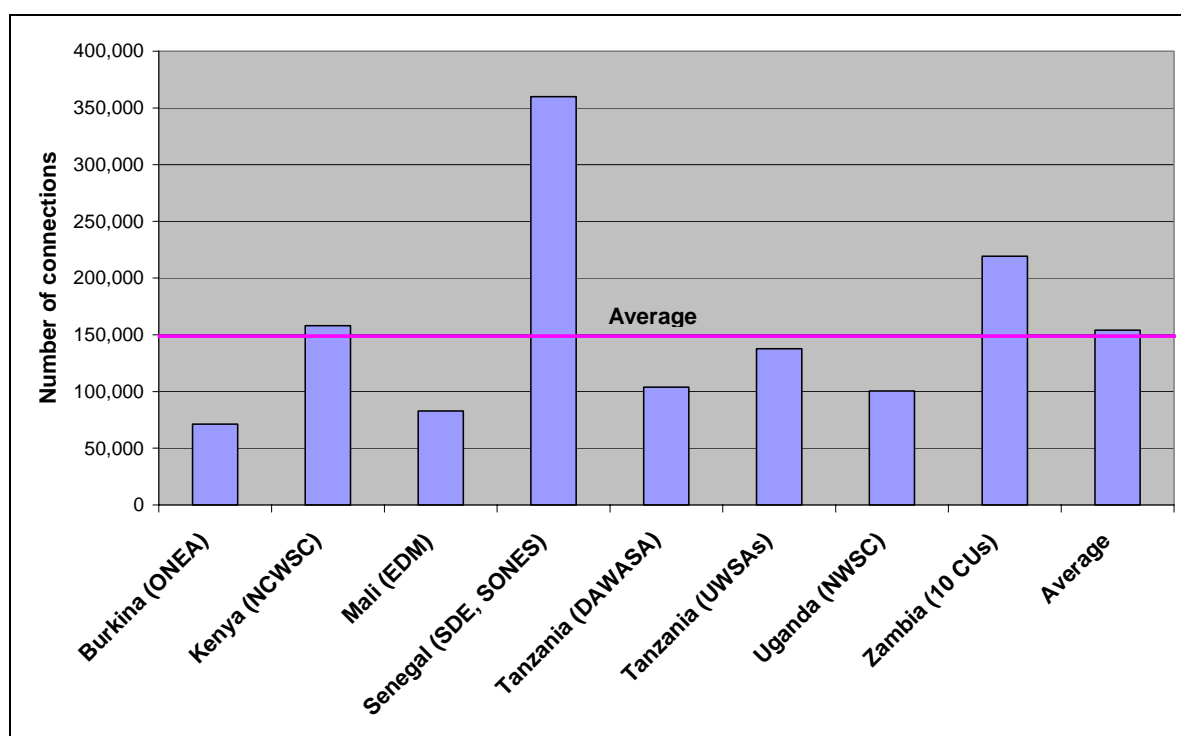
Technical performance is compared based on the following indicators:

- Coverage, based on number of connections, coverage rate, and number of people per connection
- Operational performance, based on staff/1,000 connections and unaccounted for water (UFW);
- Commercial performance, focusing on the collection rate.

#### Coverage

As one can see from Figure 2 below, Senegal has by far the largest number of connections (359,893), which partly reflects the fact that SDE is a national utility covering a high number of centres (56 in total, as opposed to 41 in Burkina Faso or 16 in Mali) and with a high percentage of household connections (see below). Senegal is followed by Zambia with 219,336 connections, but these connections are divided between 10 companies, with a much lower potential for economies of scale. Out of the national utilities in the sample, only NWSC in Uganda reaches the 100,000 connections threshold, which is often considered to be the minimum threshold for generating the private sector's interest. We note that NCWSC, operating in Nairobi only, has also a high number of connections (158,000) concentrated in a single urban area and could therefore be of much interest to private sector operators should conditions be met for making it attractive.

Figure 2: Number of connections in service area



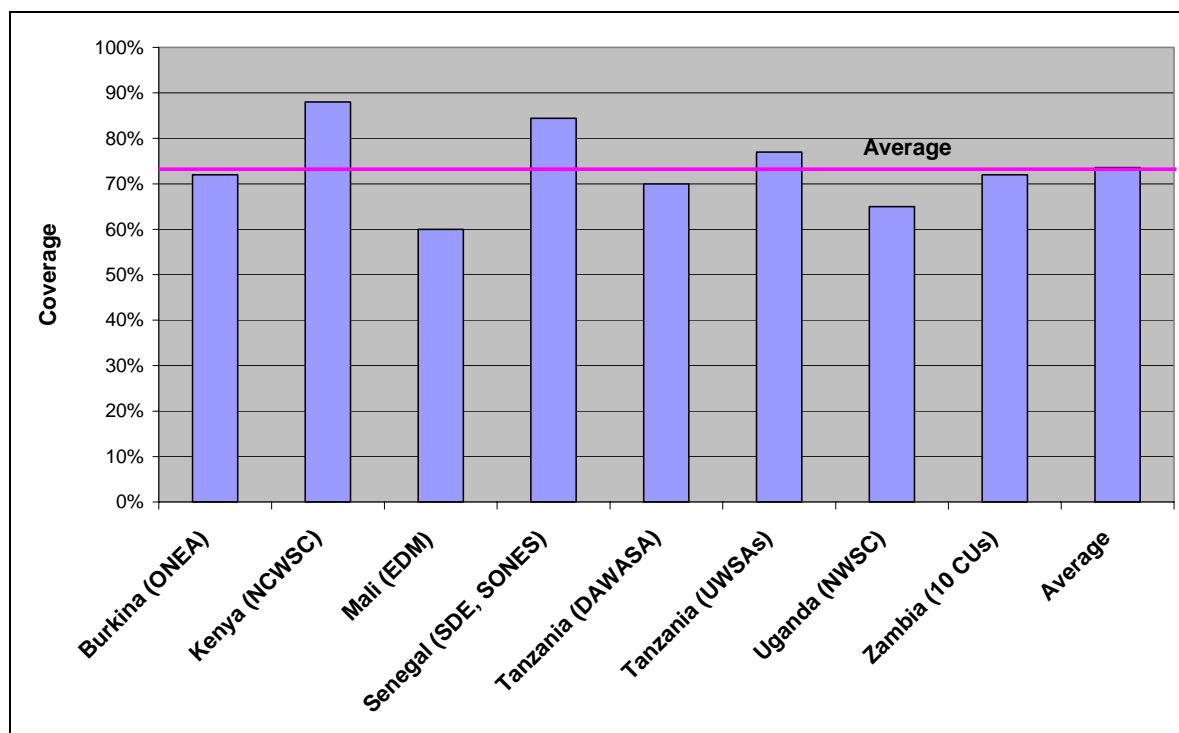
It is only when looking at coverage rates that differences linked to the size of the service area can be controlled for. Coverage rates were estimated by taking the percentage of the population in the service area of the utilities under review having access to water from the utility either through a domestic connection or through a public standpipe. Despite our best efforts, those figures need to be treated with caution, however, as there is often considerable uncertainty about the number of persons served by a domestic connection or even more so, by a public connection.

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The overall figure presented here may hide wide differences in terms of the balance between coverage via domestic connections and public connections. Finally, it is often difficult to tell from official figures whether those who receive water through street vendors who themselves buy their water at a public standpipe are included or not for example. In some cases, it was even difficult to identify whether commercial customers are included in the overall number of connections or not. Therefore, the figures presented in Figure 3 below may not be directly comparable from one country to the next.

**Figure 3: Estimated coverage rates in service area (domestic and public connections)**



Based on what is reported, coverage is highest in Nairobi although there is considerable uncertainty on this figure and coverage by domestic connections could be as low as 23%. Countrywide, Senegal has the highest coverage rate, with 84% overall in 2003 and 62% coverage via domestic connections. By contrast, coverage via domestic connections is only 21% in ONEA's service area in Burkina Faso, because the company has very early on put emphasis on expanding service delivery via standpipes.

The rest of the cases hover between 60% (Mali) and 77% (DAWASA in the capital). In Zambia, there is considerable uncertainty on coverage data as some estimates put urban coverage at approximately 60% instead of 72%. This was the subject of much discussion for a baseline study for the Devolution Trust Fund, a structure financing service extension to poor customers. In all countries, coverage data is under considerable scrutiny in the context of preparing for meeting the Millennium Development Goals on water services but available information remains quite poor.

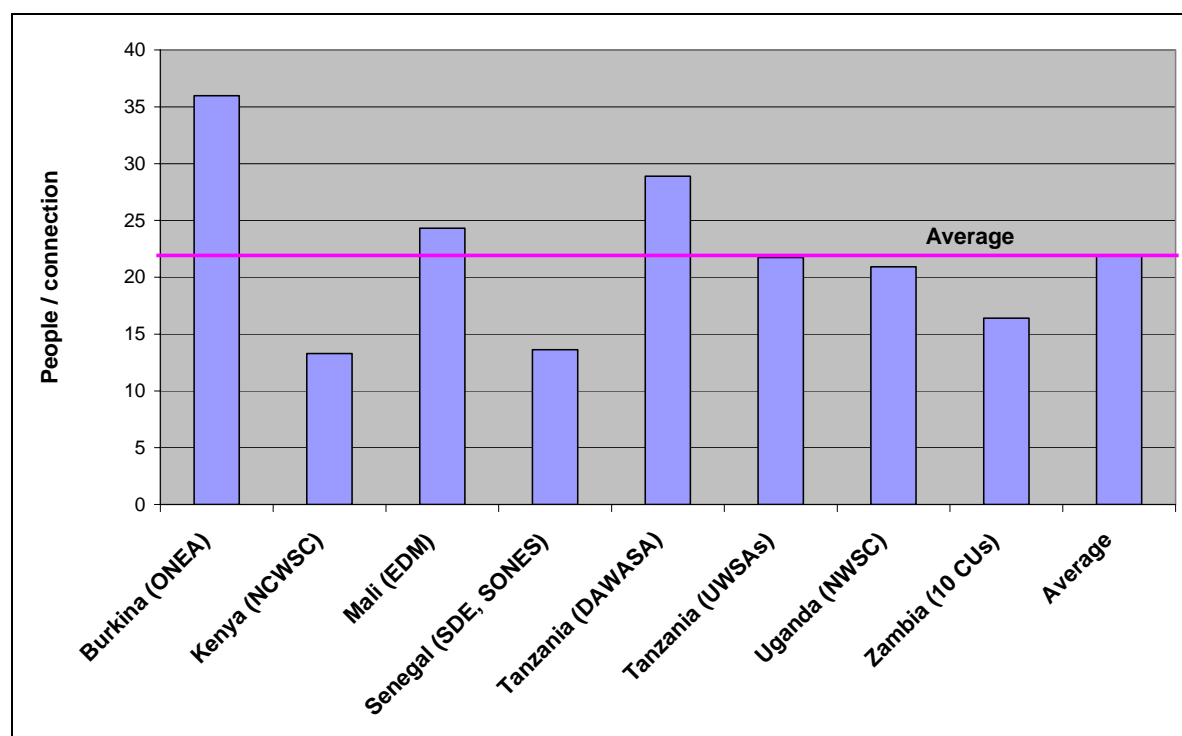
It is possible to perform a quick check on the validity of this data by looking at the number of people per connection on average, estimated by dividing the total number of people in the service area divided by the number of connection (active and inactive). This does not indicate the average number of persons served per connection, however, given that some of the people in the service area may have no access to the service and rely on alternative sources for supply.

Senegal has considerably less people per connection (around 14) due to higher coverage rates via domestic connections. Burkina Faso has the highest number of people per connection, reflecting a low coverage rate and a deliberate policy to encourage supply via standpipes in recent years, although emphasis is placed on increasing the number of household connections now that the supply problem for the capital Ouagadougou has partially been solved.

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### PSP in urban water supply in Sub-Saharan Africa

Figure 4: People per connection



#### *Operational performance*

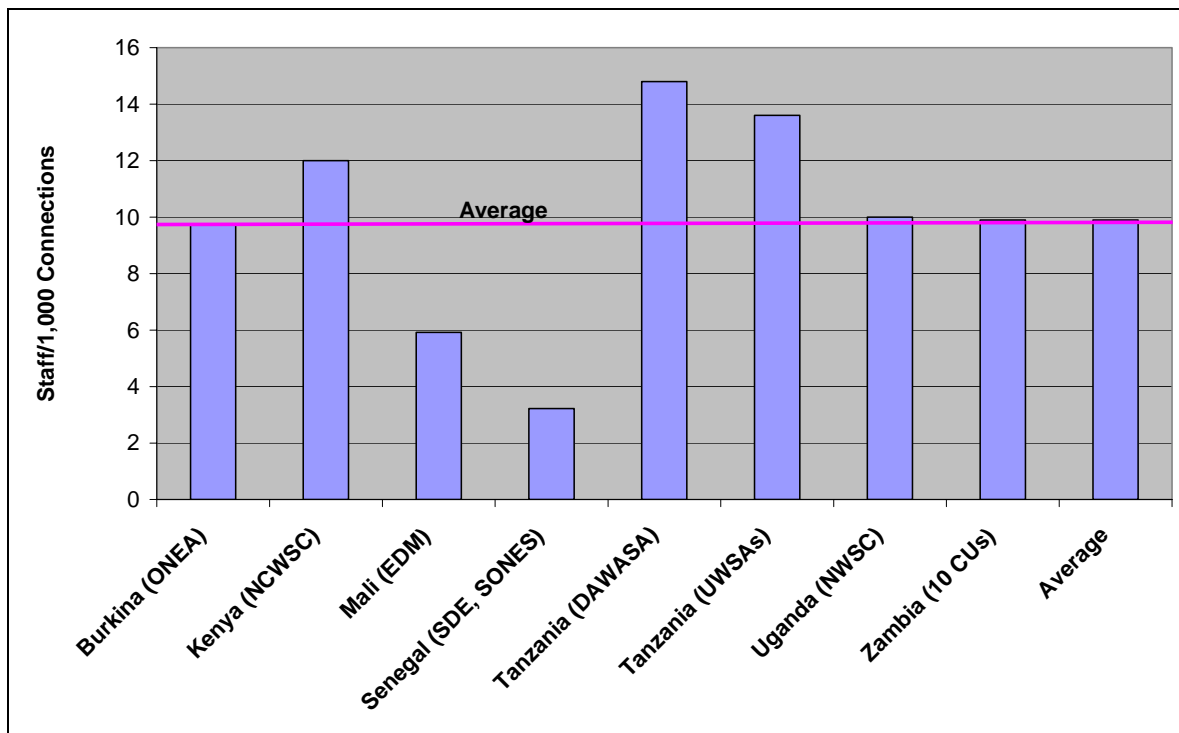
In terms of staffing efficiency, Figure 5 shows that Senegal is far more efficient than the other countries in the study with around 3 people per 1,000 connections. Mali too has a relatively low figure (around 6 people per 1,000 connections) with the rest ranging from around 9 people (Burkina Faso) to around 14 people (Tanzania).

In terms of unaccounted for water, Figure 6 shows that Burkina Faso has the lowest reported figure at around 15%, closely followed by Senegal at around 20%, where this indicator directly drives the private operator's remuneration and has been the subject of considerable scrutiny. These figures are quite low compared with international standards and partly reflect the scarcity of water in the countries concerned and the need therefore to manage demand effectively. By contrast, in countries such as Tanzania, Kenya and Zambia, UFW can be as high as 50%. This is a particular problem for Kenya where water resources are getting increasingly scarce throughout the country. Of course the reporting of unaccounted for water is subject to judgement and error and as such, we would not draw definitive conclusions from this indicator.

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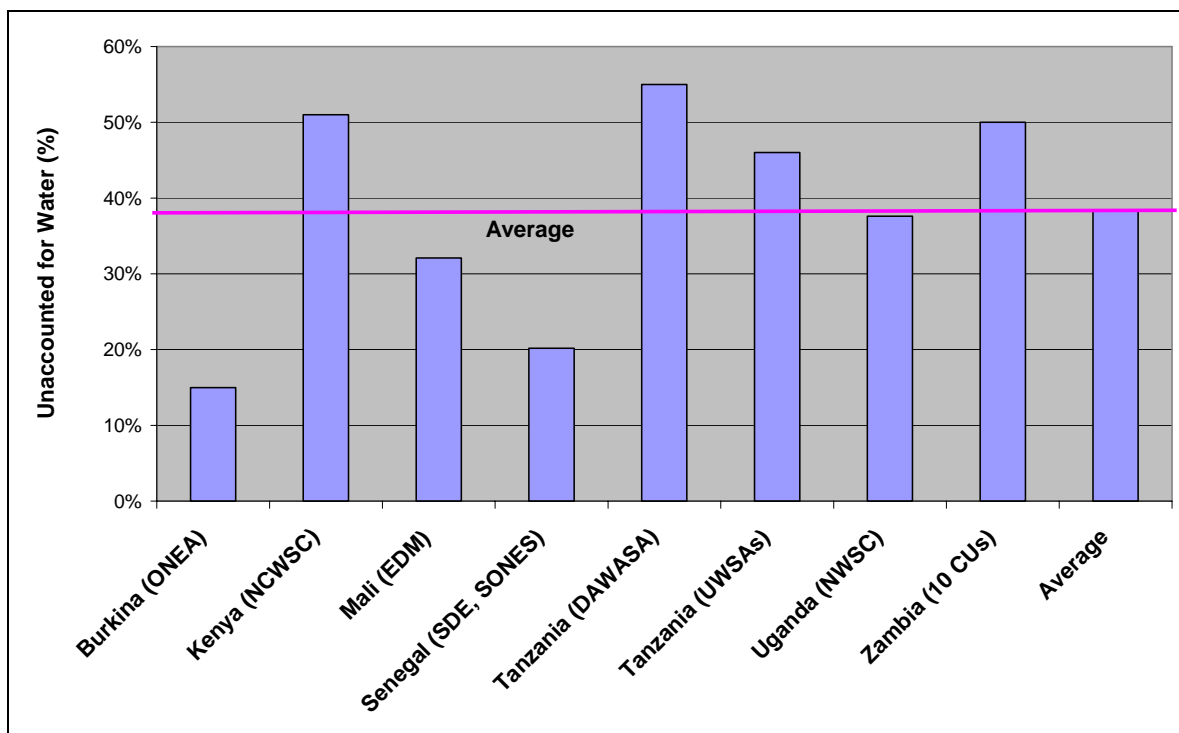
## PSP in urban water supply in Sub-Saharan Africa

Figure 5: Staff / 1,000 connections



Note: Given that EDM in Mali operates both water and electricity services, the number of staff in Mali is estimated based on the number of technical staff affected to the water sector plus 30% of the overall commercial and general administration staff.

Figure 6: Unaccounted for water



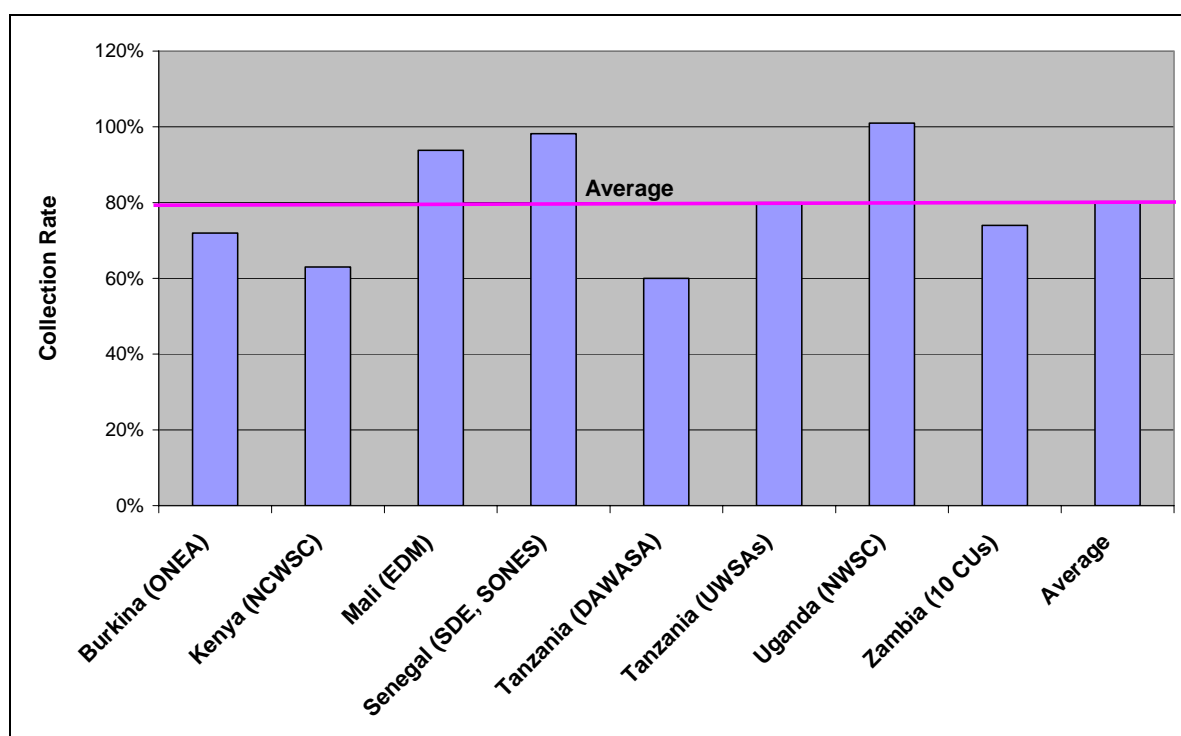
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### PSP in urban water supply in Sub-Saharan Africa

#### *Commercial performance*

In terms of collection efficiency, Uganda and Senegal stand out with respect to this important parameter with 101% and 98% collection rates respectively. These numbers reflect very efficient systems and processes for collecting revenues. For Dar es Salaam (Tanzania), the figure is below 60% reflecting very poor knowledge of the customer base and poor systems for revenue collection. This has proved to be a major problem for the private sector contract in Dar es Salaam, as discussed in the Tanzania case study. This is closely followed by NCWSC in Nairobi (Kenya), where the collection rate stands at 63%. Collections are generally very low in other utilities throughout Kenya, revealing particularly poor commercial efficiency in that country. ONEA's commercial performance is also below average, as opposed to its technical performance, explaining why the ongoing service contract was focused on improving commercial performance, although improvements still need to be made.

**Figure 7: Collection rate**



### 3.2 Comparing financial performance

Financial performance is compared based on the following indicators:

- Total revenues and revenues per connection per year;
- Average tariff and tariff structures;
- Measures of profitability, including earnings before interest tax and depreciation (EBITDA)/m<sup>3</sup> sold, operating cost recovery and capital cost recovery;
- Measure of financial efficiency, focusing on net trade receivables.

#### *Total revenues*

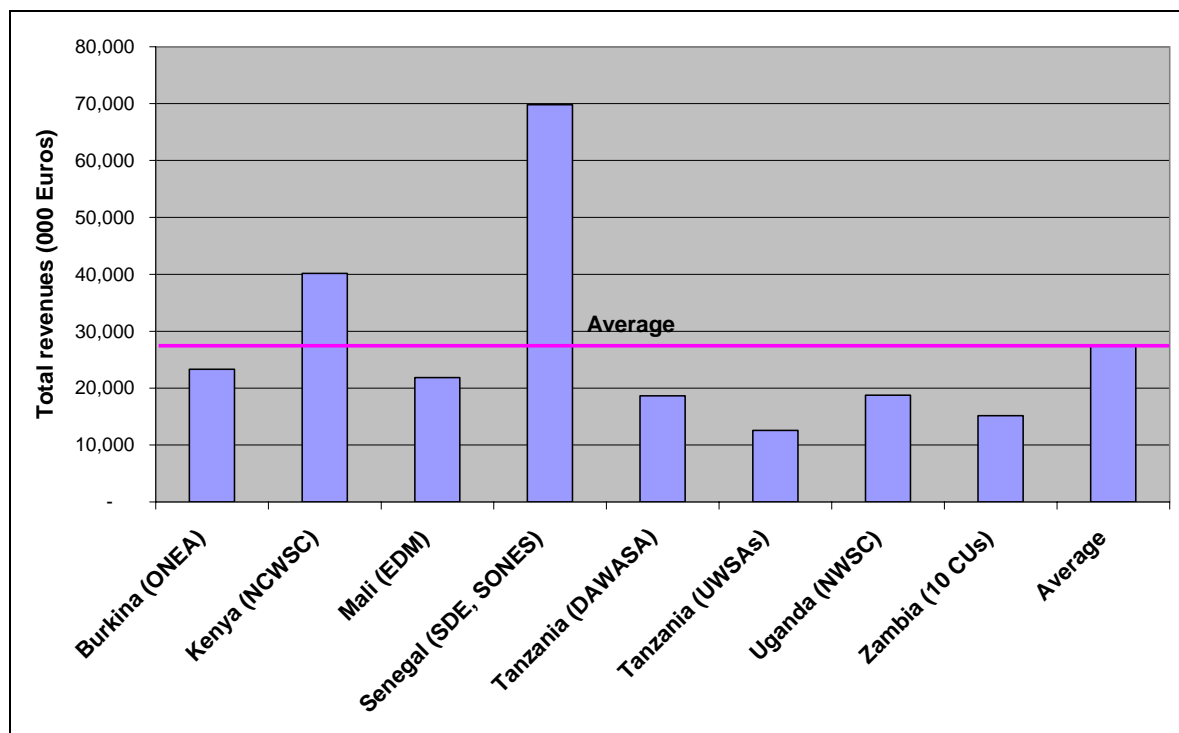
The following chart shows the level of revenue for each of the cases. The revenues for SDE/SONES in Senegal (at approximately €70 million) are substantially higher than for service providers in other countries. This reflects the high level of connections and high tariffs.

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For the other countries revenues range from around €15 million (for the 10 CUs in Zambia) to €23 million (for ONEA in Burkina Faso). Revenues for Nairobi's water services are particularly high for a single town utility (approximately €40 million).

**Figure 8: Total revenues**



*Note: Revenues for Mali are estimated at only 20% of total revenues, which is an estimate of the share of water revenues in total revenues.*

If one looks at revenues on a per connection basis, Burkina Faso is actually the highest (due to a higher number of people per connection than in Senegal, with a very high number of standpipes) with Mali second (based on 20% of total revenues) and Senegal third. Zambia has the lowest revenues per connection per year, confirming that tariffs are particularly low in this country. Note that those figures also include water sales to large users, such as industry or commercial users (including for agriculture when applicable), which may distort the figures slightly due to variations in the share of large users.

**Table 6: Total revenues and revenues per connection**

|                             | Revenues/year (€000) | Rev/connection/year (€) |
|-----------------------------|----------------------|-------------------------|
| <b>Burkina Faso (ONEA)</b>  | 23,286               | 326.9                   |
| <b>Kenya (NCWSC)</b>        | 40,154               | 254.1                   |
| <b>Mali (EDM)</b>           | 21,841               | 263.9                   |
| <b>Senegal (SDE, SONES)</b> | 69,802               | 194.0                   |
| <b>Tanzania (DAWASA)</b>    | 18,634               | 179.5                   |
| <b>Tanzania (UWSAs)</b>     | 12,544               | 91.2                    |
| <b>Uganda (NWSC)</b>        | 18,752               | 186.6                   |
| <b>Zambia (10 CUs)</b>      | 15,164               | 69.1                    |

Note: Revenues for Mali are estimated at only 20% of total revenues

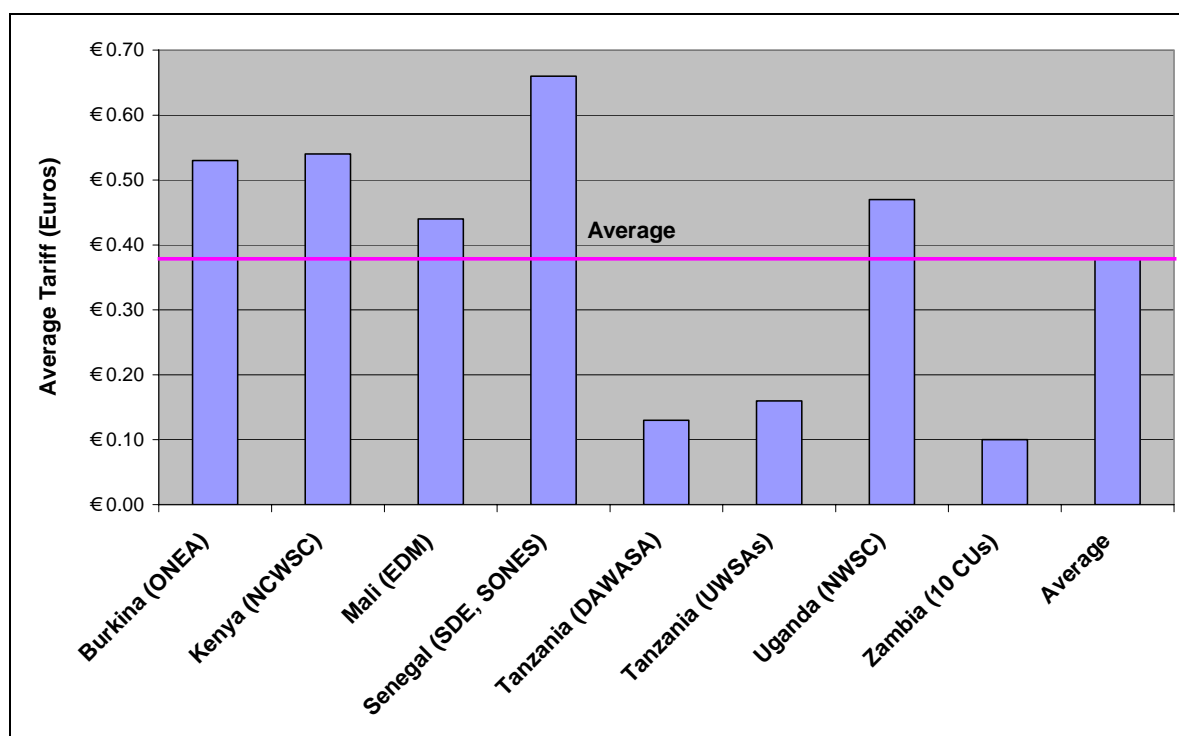
## German Development Cooperation

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#### *Average tariff and tariff structures*

The following figure shows the average tariff for each of the cases, based on dividing total revenues by the volume of water billed.

**Figure 9: Average tariff (Euros)**



Tariffs are highest in Senegal, at around €0.65 per m<sup>3</sup>. Outside of Senegal, some countries or cities have comparatively high average tariffs, such as Nairobi (€0.54/m<sup>3</sup>) Burkina Faso (€0.53/m<sup>3</sup>), Uganda (€0.47/m<sup>3</sup>) and Mali (€0.44/m<sup>3</sup>) and two countries have comparatively low tariffs: Tanzania (€0.13 for Dar and €0.16 for the rest) and Zambia (€0.10).

Such differences in average tariffs would first reflect differences in pricing policies: whereas tariffs in Senegal have steadily increased since the start of the reforms in 1996 (by 3% a year on average, totalling 26% since 1995 in nominal terms) in order to move the sector towards cost-recovery. However, comparing tariffs in Euros can be somewhat misleading as the currencies may be more or less strong against the Euro: for example, tariffs have been increased significantly in recent years in Tanzania in an effort to move urban water supply authorities towards cost-recovery but this has been compensated by a depreciation of the Tanzanian shilling versus the Euro.

The following table shows the domestic tariff structures for each of the cases, leading to a number of observations on domestic tariff structures:

- Some of the countries have tariff structures that apply nationally in the area covered by a national utility (i.e. Burkina, Mali, Senegal and Uganda), whereas tariffs vary from one urban area to another in others. In the countries where a national operator is dominant, however, small providers operating outside of the national operator's perimeter also charge different tariffs.
- Most countries have some form of rising block tariff structure with the exception of Uganda who has a single volumetric charge irrespective of the volume consumed.
- A number of countries have fixed monthly (or minimum) charges (i.e. Burkina, Kenya, Mali, Uganda and Zambia).

In addition, there are different tariffs (i.e. higher) for non-domestic customers for all countries.



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Table 7: Current domestic tariff structures

| Country (Company)             | Block                  | Charge (€) | Commentary  |
|-------------------------------|------------------------|------------|---|
| <b>Burkina Faso (ONEA)</b>    | 0-6m <sup>3</sup>      | 0.29       | Level of blocks lowered in 2001.<br>Block structure with monthly service charge |
|                               | 7-30 m <sup>3</sup>    | 0.6        |   |
|                               | >30 m <sup>3</sup>     | 1.59       |   |
|                               | Monthly                | 1.52       |   |
| <b>Kenya (NCWSC)</b>          | 0-10m <sup>3</sup>     | 0.13       | Block structure with monthly meter rent charge.                                 |
|                               | 11-30m <sup>3</sup>    | 0.19       |   |
|                               | 30- 60m <sup>3</sup> - | 0.28       |   |
|                               | >60 m <sup>3</sup>     | 0.35       |   |
|                               | Monthly meter rent     | 0.26       |   |
| <b>Mali (EDM)</b>             | 0-20m <sup>3</sup>     | 0.17       | Block structure with monthly service charge.                                    |
|                               | 21-60m <sup>3</sup>    | 0.54       |   |
|                               | >60m <sup>3</sup>      | 0.92       |   |
|                               | Monthly                | 0.89       |   |
| <b>Senegal (SDE)</b>          | 0-20m <sup>3</sup>     | 0.27       | Block structure.  |
|                               | 21-40m <sup>3</sup>    | 0.88       |   |
|                               | >40m <sup>3</sup>      | 0.92       |   |
| <b>Tanzania (DAWASA)</b>      | 0-5m <sup>3</sup>      | 0.24       | Different tariff structures in different urban areas.<br>Block structure.       |
|                               | >5m <sup>3</sup>       | 0.34       |   |
| <b>Uganda (NWSC)</b>          | m <sup>3</sup>         | 0.35       | No block structure but different tariffs for non-domestic consumption.          |
|                               | Monthly                | 0.66-13.20 |   |
| <b>Zambia (LWSC - Lusaka)</b> | 0-6m <sup>3</sup>      | 0.14       | Different tariff structures in different urban areas.<br>Block structure.       |
|                               | 6-30m <sup>3</sup>     | 0.17       |   |
|                               | 30-100m <sup>3</sup>   | 0.21       |   |
|                               | 100-170m <sup>3</sup>  | 0.39       |   |
|                               | >170m <sup>3</sup>     | 0.44       |   |

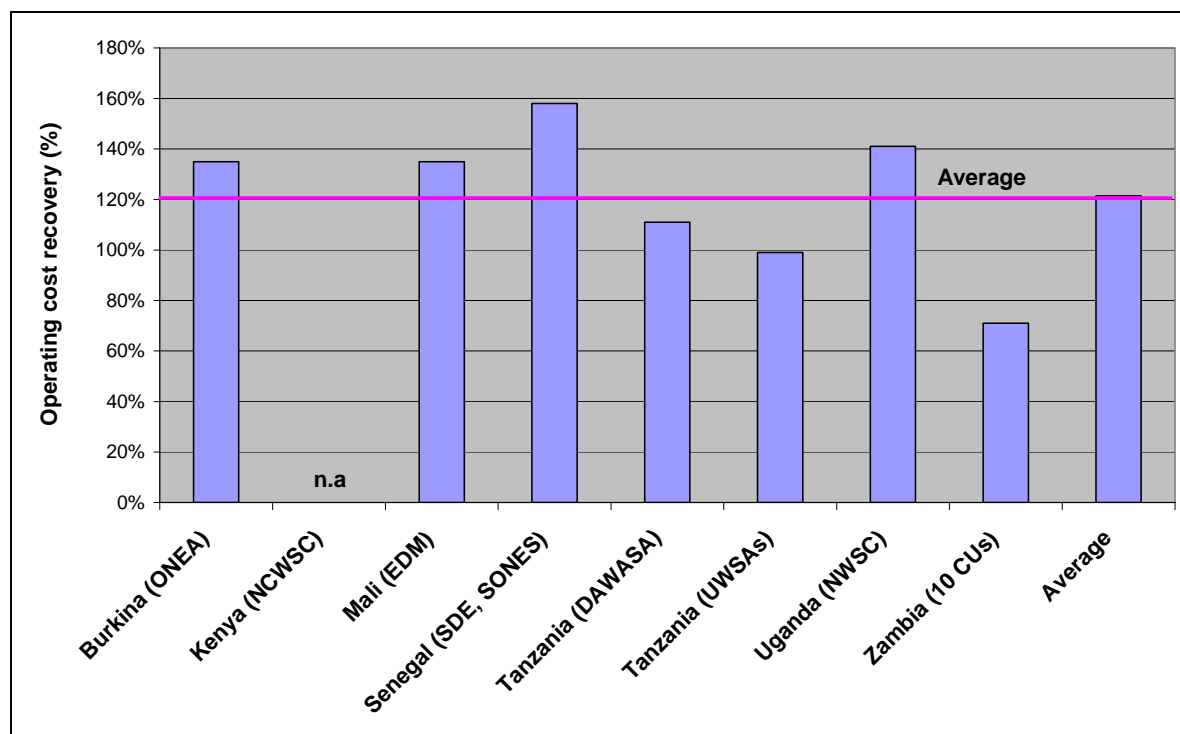
#### *Measures of profitability*

The following figure shows the level of operating cost recovery for each of the cases. One can see that most countries in the study cover their operating costs with Senegal the highest at 158%. Zambia fails to recover operating costs by a significant margin.

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Figure 10: Operating cost recovery ratio



The picture becomes clearer when one looks at the level of operating costs and the level of operating costs per connection (using the total number of connections), as done in the table below.

Table 8: Total operating costs and operating costs per connection

| Country              | Operating costs / year ( €000) | Opex /year/ connection (€) |
|----------------------|--------------------------------|----------------------------|
| Burkina Faso (ONEA)  | 17,206                         | 241.5                      |
| Kenya (NCWSC)        | 33,624                         | 212.8                      |
| Mali (EDM)*          | 16,188                         | 195.6                      |
| Senegal (SDE, SONES) | 60,182                         | 167.2                      |
| Tanzania (DAWASA)    | 16,854                         | 162.4                      |
| Tanzania (UWSAs)     | 12,706                         | 92.3                       |
| Uganda (NWSC)        | 13,308                         | 132.5                      |
| Zambia (10 CUs)      | 21,339                         | 97.3                       |

Note: Operating costs for Mali are estimated at only 20% of total operating costs, and divided by the number of water connections.

As one can see Senegal has a very high level of overall operating costs but an average level of operating costs per connection (the average is €162 per connection whereas Senegal has €167), even though the cost of production of water in Dakar, brought in from a long distance, is relatively high. The East African countries have the lowest operating costs per connection, except from Kenya which is well above average. Levels of cost per connection are lowest in Tanzania and Zambia probably reflecting the fact that operating costs need to be higher to provide an appropriate level of service. One should note that these figures are not corrected in PPP terms, however, and GDP in PPP terms for Zambia and Tanzania are also very low compared to the other countries, suggesting that an under-

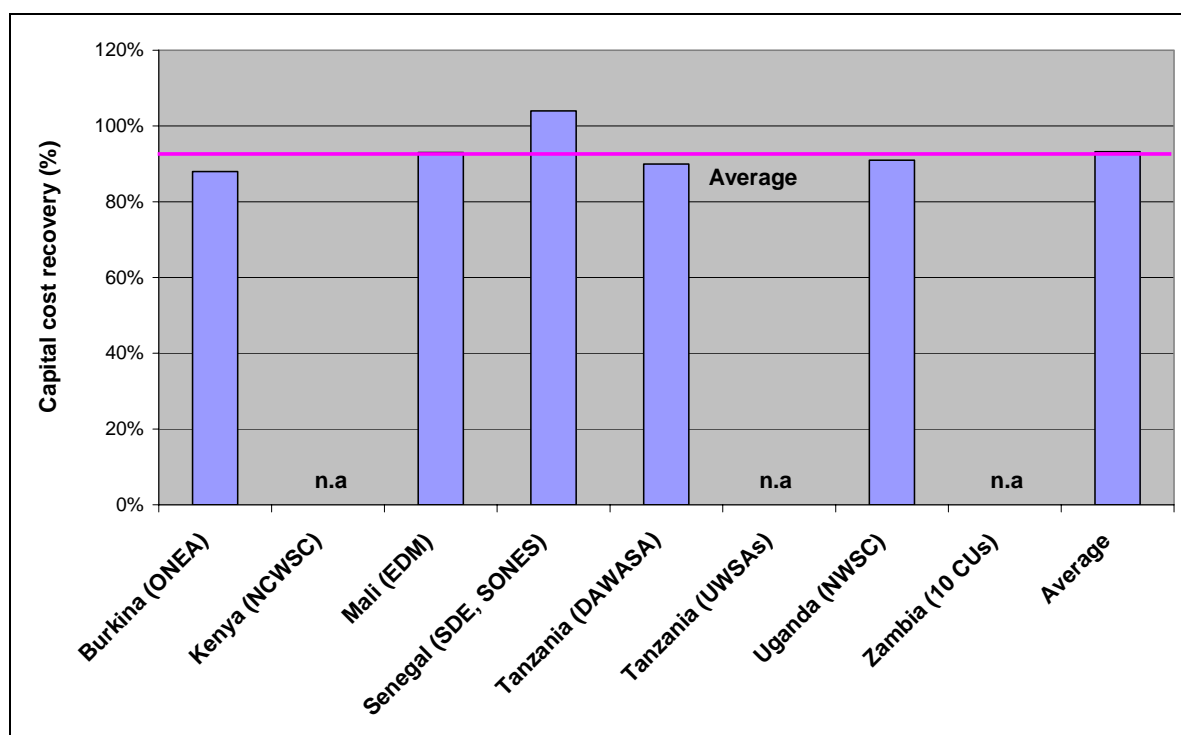
## German Development Cooperation

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valued exchange rate in those two countries may play a significant role in lowering costs when converted into Euros. Burkina Faso has the highest operating cost per connection per year, which may be due to resource constraints, high fixed costs and the price of a high level of technical efficiency. However, we did not collect sufficient cost comparator data (such as on water production costs, staff costs and exchange rate over or under-valuation) to be able to draw firm conclusions.

The following chart shows the level of capital cost recovery for each of the cases, with capital costs defined as operating costs plus depreciation/amortisation, interest expenses and dividend payments. Given the fairly low levels of operating cost-recovery it is not surprising that none of the countries in the study covers capital costs except from Senegal, which has recently moved above the 100% threshold. The average capital cost recovery ratio, which stands at 93%, does not necessarily mean that all investment costs are almost covered by tariffs, however. Some investments may have been transferred by the Government as gifts and would not necessarily appear and be depreciated in the operator's company balance sheet at a value that approaches market levels. Insufficient data was available in Kenya, Tanzania (UWSAs) and Zambia to compute this indicator.

**Figure 11: Capital cost recovery ratio**



This situation is confirmed when looking at levels of EBITDA per m<sup>3</sup> for each of the cases. We can see from that chart that the EBITDA/m<sup>3</sup> numbers for all countries are relatively small (less than €0.20/m<sup>3</sup>), except for Senegal where SDE achieved an EBITDA of 0.28 per m<sup>3</sup>. The EBITDA is negative in the case of Zambia, as most of the commercial utilities there are not able to cover their operating costs. A higher level of EBITDA would provide revenues to cover capital costs such as depreciation charges and interest on loans over and above operating costs.

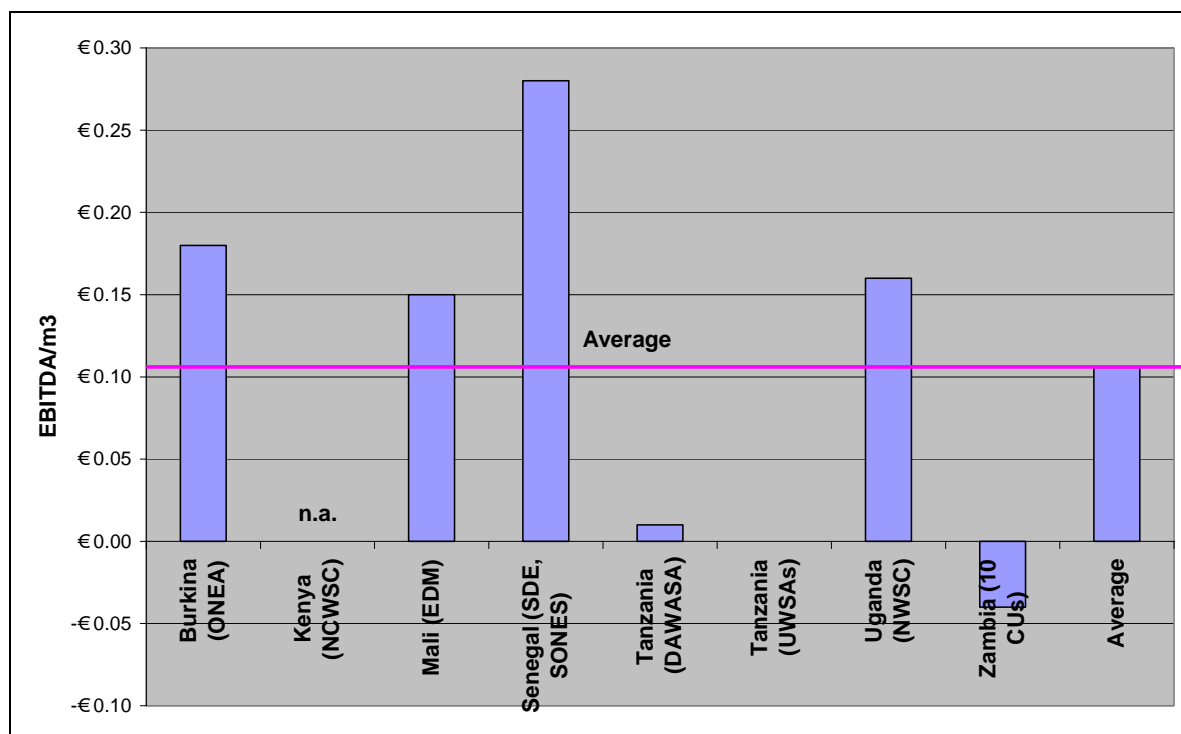
#### **Financial efficiency**

Finally, Figure 13 shows the level of net trade receivables for each of the cases, defined as the ratio of trade and other receivables to revenues and represents the number of months of outstanding receivable the business has. Senegal and Uganda have the lowest levels of net trade receivables at just over 4 months with the other countries at between 5.5 and 6.25 months.

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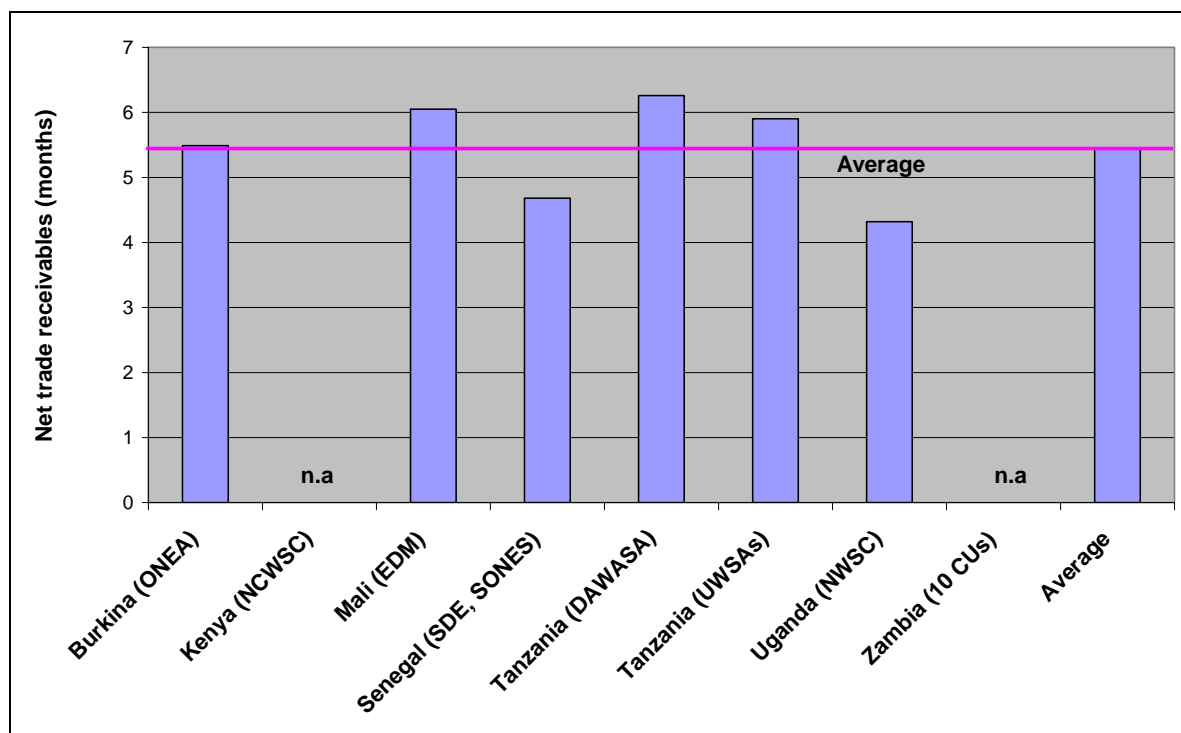
## PSP in urban water supply in Sub-Saharan Africa

Figure 12: EBITDA/m<sup>3</sup> of water billed (Euros)



Note: EBITDA for Mali are estimated at only 20% of total EBITDA to reflect the share of water services in the overall business.

Figure 13: Net trade receivables



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It is very difficult to set out definitive conclusions from the above analysis, which is limited to headline data and did not collect sufficient comparative data (physical, financial, etc) in order to form the basis for solid benchmarking of performance. For some countries more data was available covering a longer time period and the reader should refer to the individual cases to assess the performance of each country more fully. A number of key observations from the above analysis are set out below.

#### *Technical performance*

There are wide disparities from one country to the next in terms of technical performance, showing that good results are definitely achievable despite the high-risk profile of the countries under review:

- Coverage in terms of population served (within the perimeters of the service providers under review, i.e. the main service providers) is usually unsatisfactory with an average of 74% of the population in the service area getting access to the service. Senegal has the highest country-wide figure (84%). Nairobi has high coverage too (88%) although this figure is uncertain.
- Staffing efficiency is generally poor, notwithstanding the fact that labour is cheap in all of the countries in the study. The ratio of employees per 1,000 connections is around 10 on average (with an extreme of 15 staff in Dar Es Salaam, Tanzania). A notable exception is Senegal with only 3 staff per 1,000 connections, which is in line with developed country standards.
- For most countries, UFW levels tend to be high and can go up to 37% in Uganda (NWSC) or even 55% in Dar es Salaam, Tanzania. In some cases, however, UFW levels are very low and at levels comparable with developed countries, such as in Burkina Faso (15%) and Senegal (20%).
- Collection efficiency is often poor (80% on average), but again wide differences are observed. Collection rates range between 60% in Dar es Salaam in Tanzania to 98% in Senegal and 100% in Uganda in 2003-04, which is excellent by any standard.

#### *Financial performance*

Financial performance was originally rather fragile but is on the whole becoming more sustainable:

- Revenue levels vary substantially across the cases ranging from €327 per connection in Burkina Faso to €70 per connection (Zambia). The high figure in Burkina Faso is most likely due to the high proportion of public connections there.
- Average tariff levels vary substantially, ranging from a high of €0.66 in Senegal to very low levels of €0.10 for Zambia. Some of these differences can be explained by the relative strength of the currencies in each country but also to differences in tariff policies and willingness to charge in order to recover costs.
- Where revenue levels and tariffs are highest, financial performance not unsurprisingly appears to be better, with higher rates of cost recovery.
- Operating cost recovery on the whole is reasonably good, although it is less than 100% for Zambia and Tanzania (excluding Dar es Salaam).
- Capital cost recovery is unsurprisingly less than 100% for all cases where we have data available, showing that subsidies are likely to be required for a long period before reaching full cost recovery.
- Net trade receivables range from between 4.3 months (Uganda) and 6.3 months (Dar es Salaam, Tanzania).

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## 4 What can we learn for future reform design?

The general questions that this study seeks to answer is how PSP has performed in Sub-Saharan Africa, what are the main limitations and how can different sets of reforms complement each other.

In this section, we discuss key lessons that have arisen from the case studies through a series of more specific questions. Focusing on specific questions helps avoiding the rather simplified debate over whether PSP is a “good” or “bad” thing for water services.

The questions posed, which we discuss in turn are:

### *Sector performance*

- Are performance improvements correlated with ownership structures and management models?
- What incentive systems have been applied to improve performance and how did they perform?
- How does the financial strength of the sector and cost-covering tariffs influence results?

### *Private sector participation*

- *PSP models* - What PSP models have worked well and why? What key issues have emerged?
- *Risk allocation* - Which type of PSP contract or risk allocation is most appropriate depending on the context?
- *Contract design* – What lessons can be drawn from the cases for the future design of PSP contracts?
- *Sequencing* - What is the appropriate sequencing of reform and eventually introducing PSP in the sector? Can PSP be used as a short-term capacity building instrument for the public sector?
- *PSP process* – Does the process for introducing PSP have an impact on chances of success?
- *Costs of PSP* – How costly are the transaction processes for putting together and “administering” PSP arrangements? Do the benefits outweigh those costs?

### *Regulation*

- What is the role for independent water regulators, with or without PSP?

### *Pro poor*

- How can tariffs help the poor?
- How can coverage be increased?

### *Donor involvement*

- What are lessons for the role of donors in supporting reforms and PSP in Sub-Saharan Africa?

## 4.1 Improving overall incentive frameworks

Performance varies often markedly between the various cases that we reviewed: what matters for this study is whether such variations in performance may be linked to differences in ownership and management structures and how incentives for improved performance can be introduced, irrespective of ownership (public or private).

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#### *Are performance improvements correlated with ownership structures and management models?*

As one can see from Table 9 below, it is somewhat difficult to draw out definitive conclusions about which ownership/management model has worked well, as many other factors play an important role in determining performance.

#### **Sector performance is not necessarily linked to the ownership model**

It seems that PSP, when well-designed, can work very well in terms of delivering improvements and good levels of overall sector performance as in the case of Senegal for example. PSP arrangements, however, do not guarantee improvements and can lead to deteriorations in performance which might be caused by one or more of a number of reasons including: poor design; inappropriate allocation of risk; poor operator performance; poor institutional framework; and unfavourable operating environment. Section 4.2 goes into more details about those factors that may influence the success of PSP arrangements.

For example, the affermage contract in **Senegal** has delivered very good results (coupled with relatively high tariffs) whereas in Dar es Salaam, **Tanzania** a comparable contract structure has resulted in relatively poor performance (albeit with relatively low tariffs). PSP has had a mixed impact in **Mali** and **Burkina Faso** and previously in **Uganda**, but has delivered good results in Senegal nation-wide, in Malindi (**Kenya**) or in the Copper Belt (**Zambia**).

Public ownership and operation appears to be working very well in **Uganda** in delivering improved technical and financial performance and is also showing some positive results in **Burkina Faso** (with additional private sector participation introduced via a service contract), **Tanzania** and **Zambia**, particularly when strong incentive mechanisms are put in place.

#### **Reform efforts should primarily be focused on defining strong incentive frameworks and strengthening the financial health of service providers**

Such mixed results on performance mean that it is important to review the incentive frameworks that can be used to foster performance improvements by either public or private providers. We therefore sought to analyse whether specific incentive mechanisms may be more powerful than others and whether they work differently if the service operator is privately or publicly managed.

Key drivers of performance stemming from the analysis in the cases themselves include effective incentive mechanisms and the financial strength of the sector, which enables water utilities to have the resources necessary to improve sector performance. We discuss these drivers in turn, with most of the discussion focussed on incentive mechanisms, which are a key driver of improved performance.

#### *What incentive systems have been applied to improve performance and how did they perform?*

#### **Stronger incentives may be introduced when operations are privately managed...**

It is often easier to introduce stronger incentives for improved performance when the private sector is present, as increasing revenue collections or lowering cost levels can result in a direct benefit in terms of returns to private capital. Incentives for private operators usually include mechanisms to reward improvements in performance or penalise under performance. These incentives are usually strongest where the incentives are clearest i.e. where the number of performance indicators is limited in number and cover the most important areas of service delivery.

In **Senegal**, the introduction of clearly defined performance targets (with associated financial incentives) was a major innovation at the time of signing for PSP contracts in West Africa and has worked well in delivering good overall and improving performance. Some of the performance targets (such as leakage reduction) were set at unrealistic levels, however. A thorough analysis of the current state of the system should therefore be carried out before setting performance targets in order to avoid setting unrealistic targets. Mechanisms for adapting those performance targets as more information becomes available during the life of the contract should also be introduced in this kind of contract.



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**Table 9: Sector performance and ownership/management models**

| Case                | Incentive framework  | Technical Performance  | Financial Performance  | Overall assessment on effectiveness of incentive framework  |
|---------------------|--|--|--|---|
| <b>Burkina Faso</b> | <p>National limited liability company (ONEA) operating under 3 year performance contracts. Five year service contract signed in 2001 with Veolia focussing on strengthening commercial management.</p> <p>Service contract specifies a total of 19 performance indicators for services to be provided on a time-spent basis and 25 specific deliverables, with a time-frame for their execution (between 4 and 36 months following contract start).</p> <p>The service providers' remuneration includes a fixed payment and an incentive/bonus payment but the contract is very low risk with limited upside or downside.</p> <p>Sector oversight provided by the Ministry who exerts significant control over ONEA.</p> | <p>Limited improvements in recent years with collection rates, population served and connection improving, but lower performance on staff/1,000 connections.</p> <p>Overall level of performance is good particularly in terms of UFW with levels at 15%. ONEA is a fairly well managed company with low leakage and good service although coverage rates are low.</p> | <p>No real improvements seen in financial performance in recent years.</p> <p>Financial performance is broadly comparable with the best of the other countries in the study.</p> | <p>It is difficult thus far to see improvements in performance linked to the overall ownership and management model in operation. The service contract has begun to deliver some benefits.</p> <p>The institutional framework was not modified to accommodate the reform. ONEA remains 100% owned by the State and its Board of Directors is entirely composed of Ministry representatives. As a result, political interference in the company's decisions can take place and bureaucratic inflexibility has sometimes curtailed the service provider's ability to deliver change.</p> <p>Private sector arrangements were well designed and have delivered some positive results within their limited area of influence. ONEA's request to extend the contract for 2 years reflects that they have been overall satisfied with the results and appreciate the positive contribution made by the service provider.</p> <p>Incentive mechanisms are not particularly strong and there are perhaps too many deliverables in the performance contract.</p> |
| <b>Kenya</b>        | <p>Little PSP with 5 year management contract in Malindi operated by Gauff Consultants.</p> <p>Commercialised companies in various urban centres (Nairobi and Kisumu) and secondary towns (Kericho, Nyeri, Eldoret)</p>  | <p>Insufficient data to draw meaningful conclusions at the national level.</p>   | <p>Insufficient data to draw meaningful conclusions at the national level.</p>   | <p>The fact that limited data is available already points out to insufficient performance.</p> <p>There are some success stories in relation to the commercialisation of local government companies which have achieved improved financial and technical performance since their establishment.</p>   |

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| Case           | Incentive framework  | Technical Performance  | Financial Performance  | Overall assessment on effectiveness of incentive framework   |
|----------------|--|--|--|--|
|                |  |  |  | <p>Overall, the Malindi contract may also be considered to be a success (which, however, may have not been possible without strong donor support ).</p> <p>Commercialisation in Nairobi is still too recent (2004) to draw conclusions.</p>  |
| <b>Mali</b>    | <p>Twenty year water and electricity concession operated by EDM for 16 major urban centres. Began in 2000. 60% of capital owned by consortium led by SAUR. 40% owned by Government.</p> <p>The allocation of substantial risk to the private sector provides <i>prima facie</i> strong incentives for performance.</p> <p>Contract included performance targets (in terms of coverage extension and service quality) and other performance objectives. Investment obligations, however, also specified in terms of inputs constraining freedom of concessionaire to optimise cost base.</p> <p>Regulator (CREE) has extensive powers of investigation and sanction and approves tariffs. Monitoring of contract is split between CREE and Government</p> | <p>Moderate improvements in technical performance since privatisation. Significant increase in coverage (faster than original obligations) but may not be sustained in coming years due to delayed investments in a number of areas.</p> | <p>Financial position is comparable with other countries in the study, but no substantial improvements have been observed. Tariff reductions in 2003 and 2004 driven by short-term priorities and delays in collecting bills from public sector customers have severely affected EDM's financial position.</p> | <p>The choice of private sector participation model, a concession with simultaneous sales of assets appears to have been ill-suited to the prevailing conditions in the water sector at the time of privatisation, given the low level of efficiency of the company, high levels of government debt and the size of investments required to expand the service. A concession contract was not very appropriate because a number of pre-requisites were not in place, such as the commitment from the State to pay its bills or to increase tariffs to cost-recovery levels.</p> <p>Incentive mechanisms weakened by focus on inputs rather than outputs.</p> <p>Although CREE displays many of the characteristics of an independent regulator its role sits uneasily when there is a concession contract in place. Regulator has had the tendency to give prominence to protecting customers. It may have been sensible to constrain CREE's discretion.</p> |
| <b>Senegal</b> | <p>Ten year affermage contract since 1996.</p> <p>Strong incentive mechanisms built in to the contract:</p> <ul style="list-style-type: none"> <li>Affermage structure provides powerful incentives to increase revenues.</li> </ul>   | <p>Strong technical performance although UFW levels (at 20%) have not achieved the levels set out in the contract but remain</p>   | <p>Satisfactory financial performance. Capital costs still not fully covered.</p>  | <p>Strong performance as a result of robust PSP arrangements.</p> <p>Strong incentives in the contractual framework for good performance,</p> <p>Regulatory arrangements seem to have worked well</p>  |

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| Case                                   | Incentive framework   | Technical Performance   | Financial Performance   | Overall assessment on effectiveness of incentive framework  |
|--|---|---|---|---|
|  | <ul style="list-style-type: none"> <li>Performance targets – two main targets relate to leakage reduction and improvements in bill collections.</li> </ul> <p>Sector oversight mostly provided by asset holding authority SONES, soon to be reformed with the reinforcement of a contract monitoring committee.</p>   | <p>good. Significant growth in number of new connections, mostly in the capital.</p>  |   | <p>but may need to be strengthened.</p>   |
| <p><b>Tanzania (Dar es Salaam)</b></p> | <p>Lease contract operated by City Water, a private company formed by a foreign JV of Biwater (UK) and HP Gauff (Germany) and Superdoll (Tanzania) responsible for billing, tariff collection and operations and maintenance. Operations began in August 2003 and have now been terminated by DAWSA/Government.</p> <p>Strong incentive mechanisms built in to the contract:</p> <ul style="list-style-type: none"> <li>Lease structure provides powerful incentives on the operator to increase revenues.</li> <li>Performance targets – 11 main targets subject to financial penalties.</li> </ul> <p>16 additional targets not subject to financial penalties.</p> <p>Sector oversight provided by Ministry and Minister who is the acting regulator until EWURA is operational.</p> | <p>Poor technical performance by City Water. Collections began at a lower level and were increased only to fall significantly below levels previously achieved by DAWASA.</p> <p>No reported improvements in UFW and considerable uncertainty over customer base remains.</p> | <p>Financial position has been very poor caused in part by failure to increase collections. EBITDA in year 1 was a loss of approx. €m. Operating costs 64% higher in year 1 compared to prior year.</p> | <p>Undoubtedly performance by the operator has been poor but this has been influenced by the poor financial position.</p> <p>Questions have arisen over whether the contract structure was appropriate for the circumstances given in particular extremely poor knowledge of customer base making revenue risk very high.</p> |

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### PSP in urban water supply in Sub-Saharan Africa

| Case                    | Incentive framework  | Technical Performance   | Financial Performance   | Overall assessment on effectiveness of incentive framework   |
|-------------------------|--|---|---|--|
| <b>Tanzania (UWSAs)</b> | <p>No PSP. Urban water authorities (UWSAs) supply water in major urban areas.</p> <p>Incentive mechanism consists of categorising UWSAs according to performance (A to C) and rewarding higher (A) performers with greater autonomy (e.g. on salaries). New regulator EWURA not yet established. Sector oversight/regulation provided by the Ministry.</p>   | <p>Significant improvements in a number of UWSAs particularly in terms of collection efficiency, but also in terms of service levels, UFW staff efficiency and population served.</p>   | <p>Financial position has improved due in large part to increased collections.</p> <p>Financial position still weak compared to a number of other cases in the study.</p> | <p>The incentive mechanisms employed linking performance improvements to greater levels of autonomy have worked well in terms of driving improved sector performance.</p>  |
| <b>Uganda</b>           | <p>Previous international PSP experiences in the capital Kampala. Now a significant number of Ugandan PSP operators undertaking operating contracts.</p> <p>The National Water &amp; Sewerage Corporation responsible for majority of supplies in urban areas has Internally Delegated Area Management contracts (IDAMCs) in place between the head office and area offices. The contracts have well defined incentive mechanisms that relate to around 20 minimum performance standards and 5 key (parent) targets. Management fee comprise a base fee, a performance fee and an incentive payment.</p> <p>Little sector oversight undertaken by Ministry. There is a need to strengthen the regulatory arrangements.</p> | <p>Significant improvements in technical performance have been observed in recent years for NWSC.</p> <p>Collection efficiency was over 100% for 2003-04 and there have been significant improvements in connection rates, staffing efficiency and UFW.</p> | <p>Good financial performance with significant increases in turnover and operating cost recovery now at 141%.</p>   | <p>The reform process that has been pursued has delivered real improvements in sector performance. The contractual framework put in place with public operators works well and provides good incentives for improvements in performance. The emergence of a local private sector is also strength of the reform process.</p> <p>The international PSP experiences while not being successful in themselves have helped shape the reform process.</p> <p>There is a need to strengthen the regulatory arrangements to ensure continued improvements in performance.</p> |

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| Case          | Incentive framework   | Technical Performance   | Financial Performance   | Overall assessment on effectiveness of incentive framework   |
|---------------|---|---|---|--|
| <b>Zambia</b> | <p>The only significant PSP arrangements are in the Copper Belt where a management contract was established with SAUR. In the Copper Belt, the private operator is paid a fixed fee and a bonus based on performance. The contract poses little financial risk, however.</p> <p>Elsewhere there has been a continual process of commercialisation of water utilities by local authorities including the clustering of LAs. There are now 10 Commercial Utilities (CUs).</p> <p>The main incentive mechanisms are set out through service level agreements and tariff setting processes. A revised tariff setting mechanism is being put in place to try and enhance incentives for improved performance.</p> <p>The sector is regulated by the independent regulator NWASCO who has taken on the responsibility for tariff setting although the legislation is not clear about whether they actually have this authority.</p> | <p>Performance by the private operator in the Copper Belt has been satisfactory.</p> <p>Elsewhere performance has varied across the CUs. Overall performance has improved in some areas e.g. collection efficiency and staff efficiency. In other areas such as UFW, and service coverage improvements have not been observed on average. This, however, masks improved performance amongst some of the better CUs.</p> | <p>Financial performance has improved for some CUs but on average is still poor with revenues below operating costs (for all CUs).</p> <p>Tariffs remain low (€0.1/m<sup>3</sup>) and are a significant contributory factor for such poor performance as well as low collections.</p> | <p>While some performance improvements within the PSP contract, particularly in personnel management, have been observed there is some way to go and the need to consider whether incentive mechanisms (including the role of the private sector) can be improved further.</p> <p>Preparation of PSP contracts has not been as transparent and participatory as needed. This not only applied for the now terminated contract with AHC but also for a contract for Lusaka, which has been in preparation for more than 5 years.</p> <p>There is a perception by some of the stakeholders that NWASCO has too much discretionary power e.g. over tariffs and this has caused operators to look unfavourably at lease arrangements in Lusaka. NWASCO also exerts a lot of control over the sector that could impede incentives for improved performance.</p> |

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In **Burkina Faso**, one cannot really detect any substantial improvements as a result of the incentive mechanisms put in place through the PSP arrangements although there have been delays in the overall investment program which in part has led to an extension in the PSP arrangements.

In **Kenya**, the contractor (Malindi contract) has considerably improved performance after the original service contract has been transformed into a performance based management contract.

**... but incentive frameworks, particularly if badly designed, do not always lead to improved performance by the private operator**

In **Mali**, the use of a concession contract and the concomitant allocation of substantial risk to the private sector provided *prima facie* strong incentives for performance. In addition the contract included performance targets (in terms of coverage extension and service quality) and other performance objectives. Investment obligations, however, were also specified in terms of inputs constraining the freedom of the concessionaire to optimise its cost base. As such, the incentives in the contract have been weakened to some extent by overly intrusive regulation. Moderate improvements in performance have generally been observed with significant increases in coverage.

For **Dar es Salaam, Tanzania** the incentive mechanisms, while being strong in theory, failed to deliver improved performance but the reason for the poor performance was not really down to the incentives in the contractual framework. The situation is somewhat complex and readers are encouraged to refer to the Tanzania case study for more details.

**Publicly-owned corporations can also respond positively to incentives, particularly if rewards are provided to their managers and employees for improved performance**

Examples of incentive mechanisms for public operators were also found in Uganda, Tanzania and Zambia where they appear to be working well, at least in the first two cases.

In **Uganda**, there is a comprehensive contractual framework (which has benefited from the earlier management contract experiences in terms of how to establish and oversee contracts) with contracts that are performance based and are not dissimilar to PSP contracts. The ability of staff to benefit through rewards for greater performance (through the incentive fee) has been a real stimulus to the observed improvements.

In **Tanzania**, allowing more autonomy to UWSAs showing improved financial performance, particularly for the setting of wages for their employees, has been a very effective stimulus for improved performance. While the mechanisms might be criticised for lacking transparency and clarity and being akin to an annual budgeting exercise, they appear to have worked reasonably well and have helped UWSAs improve their financial performance.

In **Zambia**, more emphasis is placed perhaps on “sticks” rather than “carrots” with the emphasis on setting service levels to be achieved (through Service Level Agreements), which have not been achieved by a number of service providers. There are little in the way of benefits/dis-benefits of reaching/failing service levels that are set. Attention is being paid to the tariff setting mechanisms to try and provide greater incentives for improved performance. From the experience in the other countries where incentive frameworks have been introduced for the public sector, we believe that success will depend upon the introduction of clear incentives (with possibly a need to be clearer about the positive scores achieved under the scheme), links between tariff increases and improved performance targets ( under the service level agreements in place for the commercial utilities), and rewards to managers for improved performance (i.e. through bonuses, higher salaries etc).

***How does the financial strength of the sector and cost-covering tariffs influence results?***

While it is again difficult to make too many judgements in relation to the impact of the financial situation on overall performance, it is possible to observe that there is some correlation between higher tariffs, higher level of cost recovery and other financial indicators and performance.

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#### **Cost-covering tariffs can enhance the sustainability of performance improvements**

The best performance is observed in **Senegal**, where tariffs are the highest in the set of countries reviewed. Technical performance is also very good in **Burkina Faso**, where tariffs are second highest.

Notwithstanding this, improvements have been observed in **Tanzania** (outside of Dar es Salaam) for example where very low tariffs on average prevail, although the long-term sustainability of such improvements may be an issue if tariffs are not increased to cover some portion of capital costs.

## 4.2 Designing PSP arrangements

A wide mix of PSP contract forms were used throughout the countries under review, ranging from a service contract (Burkina Faso) to a management contract (with or without performance-based payments, as in Uganda, Kenya and Zambia), an affermage (Senegal), a lease (Dar es Salaam in Tanzania) and a concession contract (as in Mali, with simultaneous sale of shares). The circumstances for the introduction of such PSP contracts as well as a succinct evaluation of results are presented in Table 10 below. Most PSP has taken place at the level of national operators covering the largest urban centres in the country (as in Mali, Senegal and Burkina Faso) or in capital cities (such as in Tanzania or in Uganda). In addition, there have been limited attempts at private sector management in small urban centres, either with international operators such as in Malindi (Kenya) or with local operators, as in Uganda.

#### *What PSP models have worked well and why? What key issues have emerged from the cases?*

Regarding the largest private sector contracts, the record appears mixed, at best. A few examples of failure of private sector arrangements, such as in Mali or in Tanzania, have dealt a significant blow at the prospects for large-scale private sector participation in Sub-Saharan Africa. However, there are some shining examples of success as well. Of all cases, the country where PSP seems to have delivered most benefits is **Senegal**, although at a relatively high price given that tariffs are at the highest level in the country.

#### **The affermage contract model has yielded very positive results, whereas the lease model has been less successful: this is possibly due in part to differences in risk allocation**

The affermage contract model introduced in **Senegal**, has delivered significant improvements in service combined with coverage expansion. Such form of contract is often seen attractive because it opens access to grants and concessionary lending and leaves responsibility for investment in public hands, whilst allowing the private operator to concentrate on improving service efficiency.

By contrast, the lease contract in Dar-es-Salaam (**Tanzania**) has encountered considerable difficulties and has recently been terminated. The lease contract exposes the private operator to considerably more commercial risk than the affermage contract, and indeed, due to particularly poor cash collection and revenue generation, the private operator was not in a position to pay out the lessor fee. Alternatives to a lease contract could have perhaps been explored more thoroughly, and in general, a less ambitious form of private sector participation, such as a management or service contract, may have been more appropriate in that case in order to put together the relevant information base and carry out adequate analysis. In addition, in Dar Es Salaam, there was a single bidder. The winning operator may have suffered from the so-called “winner’s curse” and have been over-optimistic in terms of revenue forecast. *A posteriori*, it appears that even if the operator’s performance had been satisfactory, the contract may not have been viable.



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**Table 10: Forms of PSP and assessment of results**

| Case                | Form of PSP   | Context, original objectives and assessment of results   |
|---------------------|---|--|
| <b>Burkina Faso</b> | <ul style="list-style-type: none"> <li>• National (41 centres)</li> <li>• 5-year service contract</li> <li>• Veolia with Mazars &amp; Guerard</li> <li>• September 2001</li> </ul>  | <ul style="list-style-type: none"> <li>• Context: large water supply scheme for Ougadougou (Ziga dam), funded by donors who posed PSP as a condition for funding. Government resisted high-powered contract but accepted limited PSP involvement focusing on ONEA's weak points</li> <li>• Objectives: Improve financial and commercial management of ONEA</li> <li>• Results: Limited improvements. The private operator has no management role as such it is so difficult to evaluate its impact. ONEA thinks it is an effective way of transferring know-how and contract was extended by two years (to oversee extended investment programme). Performance improved in key areas (reduction in connection costs, bill collection) but limited impact on extending coverage.</li> </ul>   |
| <b>Kenya</b>        | <ul style="list-style-type: none"> <li>• One town (Malindi – 140,000 people)</li> <li>• 5-year O&amp;M and billing management contract, which followed a 3.5 year service contract</li> <li>• Gauff Consulting Engineers</li> <li>• January 1999</li> </ul> | <ul style="list-style-type: none"> <li>• Context: the Kenyan government sought to experiment with PSP in the operations and maintenance of water supplies. In May 1995, the Malindi area was chosen to carry out a pilot as there were no supplies constraint and various management and organizational improvements could be tested. A service contract was let without competitive tender to a German engineering company contracted for some donor-funded rehabilitation work. The contract was extended on an ad hoc basis for a total of 3.5 years. Public management following the end of the contract led to service deterioration and the letting of a 5-year contract with the same operator.</li> <li>• Objectives: specific service management improvements (including reducing leakage to 25%, improving collection) and increasing coverage by 1,000 connections</li> <li>• Results: significant improvements. Total number of connections increased by 62% from 4,000 to 6,500 and leakage went down from 50% to 25%.</li> </ul> |
| <b>Mali</b>         | <ul style="list-style-type: none"> <li>• National (16 centres)</li> <li>• 20-year concession + sale of 60% share to private operator</li> <li>• SAUR &amp; IPS WA</li> <li>• January 2001</li> </ul>  | <ul style="list-style-type: none"> <li>• Context: national operator EDM was in critical condition, with poor service, low coverage and troubled financial position. Previous attempt at management contract (1995-98) failed and was terminated early. PSP seen as the only way out at the time.</li> <li>• Objectives: improve overall management, restore the financial position, expand coverage within centres served</li> <li>• Results: disputed, contract termination or share transfer is likely. EDM met coverage expansion targets in initial years but many critical investments have been delayed due to ongoing disputes between the Government and operator over tariffs, investments and contractual terms. Performance has improved somewhat (losses have declined from 38% to 32% since 2001 and collections have improved) but the financial position remains fragile.</li> </ul>  |

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| Case                   | Form of PSP  | Context, original objectives and assessment of results   |
|------------------------|--|--|
| <b>Senegal</b>         | <ul style="list-style-type: none"> <li>• National (56 centres)</li> <li>• 10-year affermage contract with limited investment obligations</li> <li>• SAUR and local private investors</li> <li>• April 1996</li> </ul>  | <ul style="list-style-type: none"> <li>• Context: large capital investments required to solve the capital Dakar's long-term water supply problem. Donors insisted on private sector participation to improve performance.</li> <li>• Objectives: improve overall management, with a particular focus on reducing leakage and improving collections.</li> <li>• Results: significant, but at quite a high price (highest average tariff in the sample). The Government of Senegal and the public at large consider that the private operator has delivered good results, met its contractual objectives (except from the leakage target, which is proving challenging) and improved responsiveness to customer needs. Also, significant coverage expansion, thanks to public sector investments in social connections. The contract is likely to be extended (with modifications) for 5 years.</li> </ul> |
| <b>Tanzania</b>        | <ul style="list-style-type: none"> <li>• Capital Dar es Salaam</li> <li>• 10-year lease contract</li> <li>• Biwater and Gauff</li> <li>• August 2003</li> </ul>  | <ul style="list-style-type: none"> <li>• Context: failed reforms since the late 1980s and two inconclusive privatisation attempts in 1997 and 1999. Private sector participation as a condition for donor funds for network rehabilitation and expansion.</li> <li>• Objectives: improve overall company management but leave responsibility for capital investment in network rehabilitation and expansion to the public sector (DAWASA).</li> <li>• Results: poor initial performance, with low collection rates. Government terminated the contract in May 2005, with operator planning to challenge this decision in court.</li> </ul>   |
| <b>Uganda<br/>NWSC</b> | <ul style="list-style-type: none"> <li>• Kampala</li> <li>• Management contracts</li> <li>• Gauff then Ondeo</li> <li>• 2 successive contracts:               <ul style="list-style-type: none"> <li>○ 1997-2001 (3.5 years)</li> <li>○ 2002-2004 (2 years)</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• Context: overall reform of NWSC, the provider in 15 out of 41 urban towns.</li> <li>• Objectives: progressive introduction of PSP, with first a limited management contract for the operations of Kampala's water supply (sole-sourced), then a more extensive 2-year contract which was supposed to form the basis for a more extensive form of PSP, such as a lease contract</li> <li>• Results: although the private operator (Ondeo) met the majority of its performance indicators, it has been criticised for unsatisfactory performance and the parties were unable to agree on a contract extension. Prospects for further international PSP are very limited, with the government focusing on local PSP instead.</li> </ul>  |

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| Case                       | Form of PSP  | Context, original objectives and assessment of results   |
|----------------------------|--|--|
| <b>Uganda outside NWSC</b> | <ul style="list-style-type: none"> <li>• 51 small towns</li> <li>• 2-3 year performance based management contracts</li> <li>• 13 local operators</li> </ul>  | <ul style="list-style-type: none"> <li>• Context: overall sector reform.</li> <li>• Objectives: improve efficiency of operations and greater transparency in accounting.</li> <li>• Results: significant improvements in performance, including coverage extensions, better service quality and higher cost recovery performance.</li> </ul>   |
| <b>Zambia</b>              | <ul style="list-style-type: none"> <li>• Mining areas (Copper Belt) where services formerly provided by mining companies</li> <li>• Performance-based management contracts</li> <li>• SAUR (largest area): January 2001 (4 years)</li> </ul> | <ul style="list-style-type: none"> <li>• Context: privatisation of mining company in the Copper Belt, with the private owner unwilling to continue to provide water and other municipal services. Creation of an asset-holding company and delegation of service management only.</li> <li>• Objectives: take over service management responsibilities in specific areas not covered by a private operator but where assets have already been developed.</li> <li>• Results: satisfactory performance overall. Proposals to switch to deeper PSP (via a 10-year lease contract for this area plus three Commercial Utilities) by World Bank consultants were turned down however. The future of PSP in Zambia is uncertain although there is talk of a lease contract for Lusaka.</li> </ul> |

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It is useful to note that although a lease and an affermage are similar in terms of sharing of responsibilities between the public and the private parties, there are differences in terms of flow of funds which mean that the amount of revenue risk taken on by the lease-holder is much higher than by the operator under an affermage contract. In an affermage, the remuneration of the private operator is a fixed amount per cubic meter of water sold, although this amount can be adjusted over the years based on inflation and the operator's performance. The difference between total tariff revenues and the operator's remuneration returns back to the asset-holding company, to finance investments. The private operator is partly shielded from the revenue risk (although not completely) and earns the same remuneration per cubic meter sold, irrespective of whether water was sold at the social tariff or the industrial tariff. The total remuneration is then calculated by applying adjustment factors to reflect actual performance versus targeted performance on two key indicators, losses and collection. By contrast, in a typical lease contract, the operator's remuneration is directly linked to the amount of cash collected minus a fixed lease fee that it must pay to the asset-holding company.

The affermage form of contract is not exempt of problems, however, as it can be difficult to allocate responsibilities with precision between the public side of the contract (Ministry or asset-holding company) and the private operator, especially with regards to maintenance works. In Senegal, some problems emerged because the operator's performance on leakage is almost directly dependent on what the public operator can achieve in terms of investments. The public investment program did encounter some delays, which had a knock-on effect on the operator's performance. In that case, the contractual relationships were robust enough to allow a smooth renegotiation of the operator's performance targets, with the payment of compensation for lost income. But it could have been preferable to transfer greater responsibility to the operator for the management and supervision of investments so as to better align incentives (the modified contract for a 5-year extension currently being considered contemplates such reallocation).

#### **Management contracts have also yielded some positive results and have been used extensively**

Within less ambitious contracts, limited success has also been found in **Burkina Faso**, where ONEA's request to extend the contract for 2 years reflects that they have been overall satisfied with the results of the service contract and appreciate the positive contribution made by the service provider. In particular, they think that the contract is an effective mechanism for transferring know-how and building capacities and that the performance and remuneration arrangements have proved transparent and satisfactory. The service provider is prepared to extend its stay, which shows that they are reasonably satisfied with the contract as well. Certain features of the arrangements proved critical to ensuring success given the public sector nature of ONEA.

Clear benefits have also emerged in **Malindi, Kenya** although the prospects for building on this in other Kenyan cities appear slim for political reasons. An important success factor in Malindi management contract was the on-going donor assistance in funding rehabilitation and investments, which enabled the contractor to meet its targets.

#### ***Which type of PSP contract or risk allocation is most appropriate depending on the context?***

Risk (and responsibilities) allocation lies at the core of PSP contract design. A fundamental principle (which applies far wider than water but is also very relevant to water services) is that risks should be allocated to the party that is best able to manage them. Key risks worth focusing on are the commercial risk (i.e. whether revenues from water sales are going to be sufficient to cover costs which include the risks of non-payment and fraud) and exchange rate risk. Exchange rate risk can be difficult to control effectively, especially when a country is prone to sharp exchange rate fluctuations. However, such foreign exchange shock has not taken place in the countries under review (unlike in Asia or in Latin America) so this risk is not considered explicitly here.

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#### **Appropriate transfer of commercial risk often proves critical to the success (or failure) of the arrangements**

The key issue in the countries reviewed appears to be whether the commercial risk can be transferred to the private operator or whether it is too risky to do so because of a lack of reliable data or high levels of uncollected debts.

Where PSP has encountered serious difficulties, it is invariably the case that too much risk had been transferred to the private operator given the circumstances. For example, in **Mali**, it was probably too risky to shift all commercial risks to the private operator when the Government was not paying its bills and had not committed to paying them in the short-term (through compensation for example).

In **Tanzania**, the lease contract placed a significant level of (commercial) risk on the operator, City Water. The tariff structure and remuneration formula in place meant that City Water faced considerable revenue risk as their revenues were wholly reliant on cash collections (and not on some other means of receiving revenues) except for any reductions for failing to meet performance targets. Given the poor level of revenue collection and the lack of data on its customer base, this degree of risk transfer simply proved too high for the operator to bear.

#### ***What lessons can be drawn from the cases for the future design of PSP contracts?***

There are a few simple lessons that come out of the case studies in terms of PSP contract design.

#### **Avoid making mistakes!**

The first basic lesson would be to avoid making mistakes as far as possible in contract design, including tariff formulas. A lot of the problems in **Mali** occurred because of mistakes and inaccuracies in the design of the tariff formulas (for electricity in particular), even though a great number of parties (including the Government, bidders and donors) had been given the opportunity to review the contract documents. This opened the way for questioning the validity of the contract and gave ground to the regulator for exercising a considerable degree of discretion, since the validity of the contract as the main legal instrument binding the parties was called into question. Of course, no contract is perfect and all may require addition and changes to be incorporated over time. Therefore, the commitment of all parties and key stakeholders is essential and appropriate conciliation and dispute resolution mechanisms must be in place from the start.

#### **Be realistic about the parties' expectations for designing risk allocation**

The second lesson is to be realistic about risk allocation and all parties' expectations, including the public and private contractual parties and other stakeholders, such as donors or consumers. Given the difficulties faced by water PSP contracts around the world (and Sub-Saharan Africa is no exception), the private sector may be willing (in some cases) to manage water sector operations but is likely to lack any appetite for financing new works and coverage expansion. This means that, in the short to medium term at least, the bulk of water sector financing will need to come from tariff revenues and public sector financing, either from Governments or from donors.

The public sector's expectations need to be managed adequately, as the perspective of getting the private sector to finance investments is unlikely to be realistic for some time given current market conditions. As a result, the traditional concession model, as implemented in **Mali**, is unlikely to be a solution in the coming years. In Mali, all sources of public funding were cut off as soon as the private operator came on board which meant that it was very difficult for the operator to finance its planned investment program.

The higher cost of private finance was seemingly not taken into account in financial projections (by either the Government or the operator), as there was no way that it could be recovered from affordable tariffs. In addition, proceeds from the sale of shares were not reinvested in the sectors but were transferred to the general budget: at the minimum, those funds should have been reinvested in the sector to provide seed money for sector development. Given that EDM was effectively privatised through a sale of assets, it stopped being eligible for much concessionary or grant financing whereas

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private sector funds require lending conditions that simply cannot be fulfilled for a water service like in Mali. Clearly, such difficulties could have been foreseen by the operator so it is difficult to assess whether its inability to put together an appropriate financing was in good faith or not. But what is clear is that either donors' funding criteria should be amended to allow for donor funds to be managed by a private operator so as to make the most of private sector management or that the private sector should only be expected to fund very limited investments.

In **Burkina Faso**, this was acknowledged from the start: the large size of investments required and the low capacity to pay of its population ruled out the possibility of finding a private operator who would heavily invest in the system, so a high-powered form of private sector participation with associated investments was not even considered given donor's long-term commitments to the sector. There, the inclusion of a short-term investment fund (financed by the World Bank) was critical to enable the service provider to deliver immediate improvements. However, only a portion of those funds were actually used up due to the length of the procedures for obtaining the funds and the World Bank's low reactivity. Procedures for handling such funds should therefore be simplified to allow better reactivity as needs emerge.

In **Senegal**, the mechanism for sharing the commercial risk between the public and private sector built into the contract (for example, for volumes sold, tariffs and collection efficiency and UfW) aligned the interests of the two parties involved (SDE and SONES) and helped them overcome difficulties during the contract execution as both were interested in minimizing those risks.

#### Take extreme care in defining performance targets

A third, more specific lesson is that one should be careful about defining performance targets.

In **Mali**, the contract contained an inherent conflict between the definition of objectives in terms of outputs with coverage targets for example and input obligations, with commitments that minimum amounts of investment be undertaken as proof of goodwill to undertake investment. Even though the output objectives were supposed to take precedence according to the contract, the Government is paying more attention to the amounts of investment going in than on whether the concessionaire has actually fulfilled its targets or not. If both input and output targets are used, there should be a clear order of priority between those, which can be accepted by all parties.

In **Senegal**, the leakage targets were set in a rather unrealistic manner (based on what had been achieved elsewhere for lack of available detailed data in Senegal) and proved very difficult to achieve, even though they were renegotiated a number of times. This example shows that one should avoid setting unrealistic targets and that clear mechanisms for adapting them as more information becomes available during the life of the contract should be introduced.

#### Get reliable data as a pre-requisite to shifting risk to the private operator

It is essential to have reliable data in order to define the private operator's objectives in an objective and achievable, yet challenging manner. Lack of reliable data was one of the major difficulties encountered in the preparation and in the implementation of the lease contract in Dar Es Salaam in **Tanzania**. To this date, there is insufficient data available to determine City Water's revenue potential accurately: City Water does not know how many customers it has and this is a critical issue as most customers are billed on an assessed basis. There is also no reliable data on volumes of water produced or on volumes of water billed. An overriding issue, therefore, is that the lease contract as it was structured may not have been financially sustainable even if City Water had been performing adequately. The transaction advisors (Severn Trent International) had themselves expressed concerns on the viability of a lease contract although this was the contractual structure recommended by donors and in particular, by the World Bank. There was indeed a desire to see the lease form work perhaps with a belief that the Senegal experience could be repeated. In that case, however, it appears that a good first step would have been a service or a management contract (in the style of what was done in Burkina Faso or in Kampala, Uganda) in order to first strengthen the commercial functions and establish adequate information systems.



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As a second step, an affermage-type contract could have been more appropriate than a lease, as it gives an incentive for the operator to expand supplies whilst shielding it from a good portion of the commercial risk. Such a contract, however, would only be possible once metering is in place, as the operator is remunerated based on the volume of water sold.

The lack of reliable data was also a significant factor in the difficulties encountered in **Mali**. There, in retrospect, it appears that the use of a concession contract with simultaneous sale of shares was ill-suited to the conditions in the water sector at the time of privatisation, given the low level of efficiency of the company, high levels of government debt and the size of investments required to expand the service. This choice of contract was in fact largely driven by the electricity sector and although two separate contracts were let (one for electricity and one for water), they had very similar risk profiles. A concession contract was not very appropriate because a number of pre-requisites were not in place, such as the commitment from the State to pay its bills or to increase tariffs to cost-recovery levels.

#### Establish good monitoring, oversight and regulatory arrangements

Fourth, the need for good monitoring, oversight and regulatory arrangements cannot be overemphasised for improving the chances of success of a PSP arrangement. Design aspects of such regulatory arrangements are dealt with in the regulation section below in greater detail (see Section 4.3. Establishing regulatory arrangements). Preferably, the regulatory arrangements established for specific PSP arrangements should be developed within a regulatory framework for the entire sector and monitoring mechanisms developed for all key parties, including the private and the public sector. With respect to PSP arrangements, monitoring/ regulatory arrangements are likely to vary with the type of PSP contract in place.

#### Establish practical mediation and dispute resolution mechanisms

Such dispute resolution mechanisms would vary depending on the form of PSP. With a service contract or even management contracts, the use of an external technical auditor to verify performance can prove critical to minimise the potential for disputes.

In **Burkina Faso**, for example, the use of an external technical auditor to monitor the contract through regular visits proved critical to minimise the potential for conflict on performance evaluation and the auditors' recommendations have usually been accepted by ONEA's Board. However, the description of the monitoring arrangements in the contract itself is very limited and could give rise to discussions should a significant conflict emerge. In that case, it would therefore have been advisable to define monitoring arrangements in more detail. Besides, even with a limited form of PSP as encountered in Burkina, it would have been advisable to reform the oversight arrangements and in particular, the composition of the Board of Directors. At present, the Board is entirely made up of representatives from Ministries. Political interference in the company's decisions can take place and bureaucratic inflexibility has sometimes curtailed the service provider's ability to deliver change. Besides, even though the service provider's team members were supposed to assume certain management responsibilities, this has not taken place, thereby limiting their ability to introduce change.

In **Senegal**, sound relationships between the actors (including between the private operator, SDE, the asset-holding company, SONES and the Government represented through the Ministry) permitted to adapt the contractual arrangements based on the emergence of new information (such as on network losses) or problems identified in the original arrangements and contained conciliation mechanisms. The contractual arrangements provided a good framework for dealing with issues as they emerged.

In **Mali**, it appears that conflicts could have been minimised through the introduction of appropriate mechanisms for mediating and resolving conflicts, especially given that conflicts arose very early in the contract. Such mediation was attempted in several instances, for example, with the use of an external expert to define the appropriate amount of compensation to be paid to EDM following the early 2003 tariff reduction. However, having a more permanent mechanism, such as a technical



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auditor or an expert panel to settle appeals from the regulatory commission's decision could have helped in resolving conflicts whilst increasing the overall legitimacy of the system. The existence of a regulator rendered the mediation more difficult because both parties, who were used to traditional "delegation contract" types of relationship, and resented the presence of a third party.

In **Tanzania**, such a mediation mechanism had been authorized in the contract but was not really allowed to follow its course. The request for an interim review under the contract was refused following an audit carried out in line with the contract provisions by the Technical Auditors because the necessary Material Change of Circumstance was deemed not to have occurred, principally because the data was not available to demonstrate a material change (even though there might have been one). An external mediator was brought in to help re-negotiate the contract and a proposed solution was set out, but City Water failing to accept those terms led to early contract termination in 2005.

In the management contract with SAUR in the Copper Belt in **Zambia**, an external audit is carried out annually to determine the annual bonus: this is a significant task given that this bonus can make up to a third of the fixed remuneration and is highly front-loaded, with about 60% of the bonus to be paid in the first three years. No significant issue has emerged with regard to the payment of the performance incentive, which may have been facilitated by the existence of such mechanism.

*What is the appropriate sequencing of reform? Can PSP be used as a short-term capacity building instrument for the public sector?*

Sequencing issues must be considered at two levels: first, regarding the choice of contract and the planned evolution of risk transfer between the parties; and second, in terms of sequencing the various components of a reform package (including the design and implementation of institutional and regulatory arrangements, tariff reform, and the letting of the contract in and of itself).

#### **A step-wise approach to PSP is advisable...**

Given the need for a number of pre-conditions to be in place to transfer more risks to the private sector, it appears from the case studies that a step-wise or progressive approach to PSP may be required, introducing milder forms of contracts with specific objectives first rather than rushing into deeper forms of contract. PSP reforms should be planned over a reasonably long timeframe and establishing stability in the sector should be achieved prior to rushing in with PSP reforms, which are more likely to fail if buy-in for such reforms has not previously been established.

#### **... although it rarely gets implemented as planned...**

However, one needs to be aware that such a progressive approach will also need to be flexible and may not lead to the outcome that was originally envisaged. In fact, in none of the cases under review where such a step-wise approach was advocated was a move to a deeper form of private sector contract successfully accomplished.

In **Burkina Faso**, the Government was initially very reluctant to introduce private sector participation into the management of ONEA, but they eventually accepted a focused service contract under some donor pressure. Although donors initially viewed this contract as a first step to a higher form of PSP, this is unlikely to take place. The existing service contract is to be extended due to some external delays to the investment program but no higher form of PSP is envisaged at this stage.

In **Senegal**, a relatively short (10 years) affermage contract was introduced as a first step with the view of potentially moving to a concession at the end of the 10 years. Such process was retained because both the government and the private sector operators were hesitant to enter into a longer-term, higher-powered concession contract straight away. The Government wanted to maintain its options opened whilst it was deemed difficult to get the private sector to commit to substantial investments on the basis of insufficient available data. However, as we are coming to the end of that first contract, it

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appears that a 5-year extension of the affermage contract (with some slight modifications, including the transfer of more responsibilities to the private operator over investments) will be preferred to a concession contract. This is based on overall satisfaction with the existing contract form and on the observation that soft financing is going to be required for some time in order to consolidate the reforms and expand the benefits of the reforms to other sectors, such as sanitation.

**Mali** is the only country in the set that first experimented with a milder form of contract (a management contract) and then moved to a deeper form, with a concession contract. However, the concession contract did not build on the success of the management contract but rather on its failure, followed by a few years of unsatisfactory public sector management. When the concession contract form was retained, it was seen as the only solution out of a crisis: in retrospect, it appears that the root causes of the crisis should have been addressed first (potentially through some more targeted assistance) before transferring such degree of risk to the operator.

The PSP process also went full circle in Malindi (**Kenya**), but this time with more success. A first service contract (3.5 years) brought only limited benefits to the water system, with inappropriate transfer of skills to the public manager. With the expiry of the service contract, supervision of the entire operations of the water system reverted back to the national operator, NWPC. Revenue collection soon deteriorated as NWPC staff could not handle the new billing system that had been installed exclusively for Malindi and the consultant's billing supervisor had not transferred skills to his NWPC counterpart. With reduced funding, there were no more generous allowances to staff that the consultant was offering earlier. Staff morale was low as remuneration was back to the level at the start of the service contract. In order to maintain the level of operations and maintenance and avoid further deterioration of customer service, NWPC decided to urgently arrange for continued private sector participation in Malindi.

#### **...And can sometimes have some positive unexpected consequences!**

But even if the expected evolution from a lower level of PSP to a deeper form of PSP is not followed, a short term PSP experience can have positive benefits for the public sector, in terms of enhancing its capacity to specify and oversee performance. For example, in **Uganda**, the contractual mechanisms that were put in place for public operators with significant success have undoubtedly been influenced by the experiences with international PSP operators. The contract with Ondeo from 2002 to 2003 was the subject of much criticism from the national operator, NWSC, leading to Ondeo's departure after the end of their two-year contract. It was perhaps the catalyst, however, for the contractual framework put in place for public operators. In addition, the delay in other efforts at sector reform and in the attempts to put in place a lease contract for the whole of NWSC allowed NWSC to pursue its own reforms. As an indirect result of those PSP efforts, NWSC has built up capacity in contract drafting, contract negotiation and implementation and monitoring and in turn has adopted private management style principles.

#### **Establishing regulatory arrangements early on in the reforms allows avoiding problems later on**

In terms of sequencing of the reforms, once the form of private sector arrangements has been selected, it seems essential to establish the regulatory institutional arrangements first, prior to letting the contract so as to build up the capacity of the public sector to monitor the arrangements. In **Mali**, a serious shortcoming of the reform process was that the CREE was not effectively in place until early 2002, i.e. after the operator had already been operating for almost a year. This means that they were not in place when the contract was prepared and signed, which may explain some of their later problems in interpreting the contract.

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#### **Progressive tariff increases to move to cost-recovery levels are most effective and less socially disruptive**

Tariff reform should also be initiated prior to contract signing (also as a way to demonstrate commitment to the private operator) and should then be continued until after contract signing, in order to allow for progressive shifts towards cost-recovery tariffs rather than abrupt ones.

Such progressive approach seems to have worked well in **Senegal**, where the parties informally agreed to increase tariffs by 3% a year until reaching the sector's financial equilibrium. Such equilibrium was reached at the time which had been forecast by the model and the gradual increases in tariffs were well accepted by consumers.

#### *Does the process for introducing PSP have an impact on chances of success?*

One of the crucial elements of a successful PSP is the process leading to the preparation of the contract. This includes the sensitisation and participation of all key stakeholders. It is crucial that key players be convinced that PSP is the right way forward and that professionals inform the public and advise politicians.

**Senegal** followed a good process, with a series of preparatory workshops and visit to other countries (Guinea, Cote d'Ivoire and Ghana) in order to help Senegalese decision-makers form a view on the best model for their country. The result was a contract form which was very well-suited to the local circumstances and was able to capitalise on lessons learned in other countries. Initially, the Government was rather reluctant to introduce private sector participation but later could see its attractiveness and became later a staunch supporter of the reforms. This has proved a key factor for determining success as all parties were able to overcome their differences in views as they shared a common interest in ensuring the success of the reforms. However, one potential criticism is that members of the general public were not always kept informed, an area which is now being corrected in the second generation of reforms.

Involving population in discussions of the reforms becomes more and more important as years go by. Potentially, the formation of civil society forums to discuss issues surrounding the reforms could be a useful way of organising such participation.

#### *How costly are the transaction processes for putting in place and "administering" PSP arrangements? Do the benefits outweigh those costs?*

Two types of costs relating to the introduction of PSP need to be distinguished: the costs of carrying out the reforms (including contract preparation but also all associated reforms, such as regulatory and tariff reforms) and the costs of remunerating the private operator for its services. The standard argument in favour of privatisation is that, even though those costs are potentially quite high, they can be more than compensated by the benefits stemming from private sector efficiency and superior know-how. It was not possible to carry out a detailed cost-benefit analysis within the framework of this study, however, and it is therefore difficult to ascertain whether the benefits did indeed outweigh the costs in the case of the PSP contracts under review.

#### **PSP does generate substantial costs**

What comes out clearly from the analysis is that PSP does generate substantial costs, both at the time of contract preparation and then during contract implementation, which should not be underestimated. Those costs can be difficult to quantify in some cases but are significant nevertheless: this is for example the case with the cost of government officials' time and attention. In the case of **Mali**, for example, it appears that the costs incurred for supervising the contract and resolving disputes surrounding the EDM concession are disproportionate considering that the contract is for EDM's perimeter only, i.e. for a provider covering at most 20% of the national population.

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With respect to transaction costs, it is quite difficult to get precise cost estimates, given that one should take into account the costs incurred by the Government (including the cost of their advisers and their own costs), by donors engaged in the process and by operators preparing the bids. The easiest part to estimate is the cost of transaction preparation incurred by donors and their advisers.

For example, for the SAUR contract in the Copper Belt in **Zambia**, which is a relatively small contract, the World Bank spent €2.4 million on Pre Project Funding (PPF), including €200k on transaction advisors. For this contract, the cost of SAUR's management fee amounted to €1.5 million in 2003 or 27% of the asset-holding company's turnover, which in turn is relatively high.

In **Tanzania**, the World Bank estimated that they incurred around USD 4 million in the PSP process and this cost is likely to be only a small portion of the total transaction costs given the several attempts made by the Government to introduce PSP over several years. In addition, the cost base for the lease contract is substantially higher than when DAWASA (the public entity) was the operator. Operating costs have risen by around 64% in 2003-04 largely as a result of increased salaries (e.g. for expatriate staff) although this is not sufficient to explain such increase. In order for the financial situation to be satisfactory, substantial increases in revenues and cash collections were required.

In **Uganda**, the total cost of the transaction for letting the management contract in Kampala was estimated at €435k, including the costs of the transaction advisor and technical and financial audit. The Contract provided for a total Fixed Management Fee for two years of around €3.2m, including a net additional expenditure for management staff of €1.2m for the two years or around 6% of the annual revenues from Kampala.

#### **Given the uncertainties related to the benefits to be expected from PSP, conducting a thorough cost-benefit analysis before embarking on a PSP process would be advisable**

In future cases, a thorough cost-benefit-analysis based on experiences from comparable cases would be a prerequisite for entering a PSP process. The size of the sector (volume of water sold, number of customers, number of towns, density of population) would play a crucial role in defining the limits where bringing in an international private operator would not be cost effective.

Although the analysis in the case studies has focused on international private operators, we have also noted the emergence of performing public operators or local private operators (for example, in **Tanzania** or in **Uganda**). Calling on their services to improve performance may allow achieving comparable improvements in performance at a substantially lower cost.

## 4.3 Establishing regulatory arrangements

In this sub-section we assess whether the presence of an independent regulatory authority can contribute to improved sector performance, with or without PSP. Table 11 briefly summarises the institutional arrangements with respect to regulation in the countries under review.

#### **Autonomous regulators are relatively rare in the urban water sector in Sub-Saharan Africa, and their independence is often opened to question**

As can be seen from this table, only **Mali** and **Zambia** have established a regulator for the water sector (in the case of Mali, the regulator also regulates the electricity sector). In other countries, regulators have been created by law (as in **Kenya** or **Tanzania**) but they are in the process of being established (in Kenya, the regulator has been established in 2003 and it has taken up operations in 2004) or have their functions extended to the water sector (in the case of EWURA in Tanzania, also in charge of regulating electricity services).

Other countries, such as **Senegal**, **Burkina Faso** or **Uganda** have no regulator in place and rely on various forms of regulation by contract.

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Table 11: Institutional arrangements for economic regulation

| Case study          | Institutional arrangements for economic regulation   |
|---------------------|--|
| <b>Burkina Faso</b> | <b>No independent regulatory body.</b> Tariffs are set by ONEA's Board of Directors, which needs to obtain Council of Ministers approval. ONEA's performance is monitored via 3-year performance contracts with the State.   |
| <b>Kenya</b>        | <p><i>The 2002 Water Act establishes the Water Services Regulatory Board (WSRB) whose main responsibility is to regulate the provision of water services in the country, with the main following functions:</i></p> <ul style="list-style-type: none"> <li>• Economic and technical sector regulation: the WSRB has the power to set, monitor and enforce both technical and economic standards for the sector and is requested to define technical and economic guidelines.</li> <li>• Legality and legitimacy of sector arrangements: the WSRB needs to ensure compliance with the Water Act as well as other legal provisions and has the duty to approve legal arrangements such as the agreement between Water Service Providers and Water Service Boards.</li> <li>• Information and stakeholder consultation: decisions are to be taken in a transparent way, sector institutions need to be coordinated and key stakeholders need to be consulted.</li> <li>• Policy advisory role: the WSRB is requested to advise the Ministry on the development of the sector policy.</li> </ul> |
| <b>Mali</b>         | <p>The <b>Commission de Régulation de l'Electricité et de l'Eau (CREE)</b> was established by Law in 2000. According to the sector law, it is in charge of enforcing specific tariff setting principles and is responsible for regulating drinking water services in urban centres, namely:</p> <ul style="list-style-type: none"> <li>• Assisting Ministries with the development of sector policies;</li> <li>• Controlling all call for tender documents to recruit service operators;</li> <li>• Approving all tariffs submitted by service providers prior to their official application or suggesting alternative tariffs;</li> <li>• Monitoring the respect of their obligations by the concessionaire and the public authority which has let the delegation contract;</li> <li>• Resolving disputes and arbitrating in the event of conflicts between the concessionaire and the public authority which has let the contract;</li> <li>• Defending the interests of consumers.</li> </ul>  |
| <b>Senegal</b>      | <b>No regulatory body.</b> The asset-holding company, SONES, monitors the performance of the private operator and calculates tariff increases, which need to be approved by the line Ministry. A debate about the creation of a regulatory body took place recently in the context of the second generation of reforms. Such idea was resisted by several stakeholders and the current proposal (most likely to be adopted) is to establish a sector monitoring committee, with representatives from the Ministries and sector stakeholders.   |
| <b>Tanzania</b>     | The <b>Energy and Water Utilities Regulatory Authority (EWURA)</b> Act 2001 established the EWURA, with the responsibility inter alia for regulation of the distribution of water and sewerage. The extent of the regulatory functions conferred on EWURA in respect of water supply and sewerage services is to be determined by further sector specific legislation, which however, has not as yet been promulgated. Therefore, although EWURA exists for other utility sectors, as far as the WSS sector is concerned, EWURA has yet to have its functions determined such that it becomes  |

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| Case study    | Institutional arrangements for economic regulation  |
|---------------|---|
|               | operational. As a consequence, regulation of the WSS sector effectively remains with the line Ministry.   |
| <b>Uganda</b> | <b>No regulator.</b> Tariff determination is done by the Ministry and performance regulation is carried out by the Performance Review Committee which oversees the Performance Contract between NWSC and the Ministry.  |
| <b>Zambia</b> | <p>A centralised independent water regulator, the <b>National Water Supply and Sanitation Council (NWASCO)</b>, was set up by law in 1997. It is responsible for the following:</p> <ul style="list-style-type: none"> <li>• Advising local authorities on commercially viable institutional arrangements;</li> <li>• The licensing of utilities and other service providers;</li> <li>• Developing guidelines for water and sanitation services inter alia in relation to the provision of supplies; establishing utilities; technical and financial arrangements; and the setting of tariffs;</li> <li>• Establishing and enforcing standards for water supply or sanitation services; the management of utilities and other service providers; and the design, construction, operation and maintenance of water supply and sanitation facilities;</li> <li>• Advising utilities and other service providers on procedures for handling complaints from consumers;</li> <li>• Disseminating information to consumers on matters relating to water supply and sanitation services;</li> <li>• Carrying out any other activities relating to the regulation of water supply or sanitation services which are necessary or conducive to the better performance of its functions under this Act.</li> </ul> |



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**When PSP is in place, autonomous regulatory agencies with considerable discretion are often perceived negatively by private operators, as increasing regulatory risk rather than reducing it**

In **Mali** the water and electricity sector regulator, the CREE, was set up with almost all of the attributes of an independent regulator, including a considerable degree of discretion with respect to key decisions such as tariff setting. However, such a model of independent regulator sits uncomfortably with the contractual tradition reflected in the concession contract, which is based on French tradition with no independent regulator. There was therefore an inherent conflict between the perception (by the Government and the CREE) that the regulator should set tariffs based on its interpretation of the broad tariff-setting principles contained in the law as opposed to the operator's perception that the tariff setting provisions contained in the private contract should take precedence. This kind of situation frequently occurs when a tradition of contractual model inspired by the French model is overlaid with a UK/US-style regulator.

Given Mali's lack of experience with regulation and the potential for political influences (which took place in Mali despite the regulator's autonomy on paper), it appears that it could have been preferable to limit the regulator's discretion or to circumscribe it better (on areas of penalty determination for example). Indeed, since set-up, the regulator has been struggling to establish its legitimacy and its independence vis-à-vis the political powers. The regulator has had the tendency of giving prominence to its duty to "protect customers' interests" (which they interpret as the need to cut prices) over their duty to preserve the financial viability of the operator. Consumer protection activities, such as complaint resolution have remained limited, and the regulator remains little known by consumers.

In **Tanzania**, when the EWURA Act was passed, it was agreed that EWURA should not be able to change the PSP arrangements in Dar es Salaam, which is a good example of constraining regulatory powers. However, in that case, EWURA failed to be operative in the water sector prior to the contract being terminated, so it is not possible to judge the effectiveness of such limits on discretion.

In **Kenya**, there is a fear that the Water Services Regulatory Board may seek and be able to exert considerable influence over any PSP contract (or). The risk is that the WSRB may unilaterally change the licence under which the WSB operate and which forms the framework agreement under which any private operator would need to operate. Indeed, under the Water Act 2002, it appears that the WSRB is only 'semi-autonomous' and therefore, political interference from the Ministry of Water and Irrigation is likely. This, in addition to limited political will to introduce PSP, gives rise to perceptions of regulatory and political risk, which potentially limits the scope of PSP in Kenya in future years.

In **Zambia**, NWASCO was set up as an independent regulator and has considerable discretion and powers. The presence of an independent regulator has undoubtedly provided greater sector co-ordination and helped contribute to improved sector performance and limit political interference. Decisions on tariff adjustments are not taken by a single person (such as the Minister like in other surveyed countries) but by the NWASCO Board where the representatives of the Ministries are in minority. Consequently, tariff adjustments are decided upon by the main sector stakeholders, including the private sector and consumer representatives. This has proved successful at limiting political interference in tariff decisions: for example, 3 tariff adjustments with up to 100% tariff increases were introduced in the run-up to the last national and local elections (up to 3 month beforehand).

However, NWASCO's actions have been criticised by some as being too discretionary. First, NWASCO has taken on the role of setting tariffs when it is not clear from the law that it has such powers. Its approach to tariff setting and sector regulation places perhaps more of an emphasis on "sticks" rather than "carrots", which introduces the risk of stifling incentives for real improvements. For example, it has reduced tariffs to penalise companies in certain urban areas where performance has proven to be insufficient (for example, when supply hours had dropped to 3-4 hours daily in very populated areas in Lusaka).



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This high level of discretion on the part of NWASCO is perceived as a substantial risk by potential private investors, which partly explains the lack of momentum for developing private sector participation arrangements in the capital city Lusaka.

New tariff setting mechanisms are being established which should help strengthen incentives for improved performance, but this mechanism lacks a medium-term framework to allow water utilities to plan forward and effectively tackle inefficiencies. The previous tariff-setting mechanism resembled more of a budgeting exercise and the new mechanism is a considerable improvement on the previous situation, although it could still be improved further in our view.

#### **PSP arrangements can work well without a regulator in place, but they require other forms of monitoring and dispute resolution mechanisms**

In **Senegal** the PSP arrangements have worked well without the presence of an independent regulatory body. The creation of a regulatory agency for the sector was briefly considered in the context of the planning of the second generation of reform but this idea was discarded. Proponents of a regulatory agency argued that SONES currently faces a conflict of interest, as it needs to monitor SDE's activities which depend on its own actions, particularly because it is carrying out investments that can impact SDE's operating performance. During the current contract, a number of difficulties have emerged related to the definition of investment responsibilities. An external mediator helped resolve some of the disputes especially at the start of the contract.

Key local stakeholders and some donors do not think that the existing monitoring arrangements needed to be modified, as they have so far permitted resolving conflicts satisfactorily. They argue that the contract monitoring committees that exists under the concession contract and the affermage contract can be strengthened to act as a forum for conciliation but that there is no need for an additional permanent structure, as this would only add to the institutional costs of running the sector. On the other hand, customer associations such as ADEETELS (which focuses on customers of utility services) have called for the establishment of a regulatory agency in order to improve transparency in the sector and provide better means of recourse for customers in the event of poor service. The Court system, which is supposed to deal with customer complaints (in the second instance, if the customer did not get satisfaction through SDE or SONES directly) is totally saturated.

In the end, it appears that the solution favoured by the main stakeholders (introducing a more formal contract monitoring committee) will be retained and that the ongoing contracts are likely to be modified to include a clearer assignment of responsibilities (particularly, with respect to renewals and investments) and greater autonomy for SDE in order to manage investment implementation.

#### **The need for monitoring institutions is also strong with public sector management, even if a full-fledged regulator is not established**

In **Uganda**, while the contractual arrangements within NWSC work well at present and are delivering positive results in terms of sector performance, they may need to be strengthened in a number of ways. There are a number of specific issues in particular where contract incompleteness may cause the need for additional regulatory mechanisms. The most obvious area where the regulatory framework needs strengthening relates to tariff setting as decisions are currently taken by the Minister (i.e. outside of the contractual arrangements).

There would be some merit in strengthening and expanding the functions of the Performance Review Committee to oversee the Performance Contract between the Government and NWSC. Such Committee could be turned into a more permanent structure or even a regulatory body which would take over responsibility for monitoring and enforcing the Performance Contract and have the resources allocated to do this (i.e. a permanent basis for doing this). There would be a clear role for such body to play a role in tariff setting in order to increase cost-recovery levels up (capital cost recovery as we calculated it is close to 100% but this hides the fact that NWSC has received a lot of grants and subsidised loans in the past).

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However, given the difficulties encountered with regulators having a high level of discretion in other countries, it appears that the roles of such independent regulator should be carefully circumscribed. Its functions could probably be limited to the role of an arbitrator, resolving contract disputes and advising on tariffs rather than setting tariffs, in order not to cut across the way the contract is currently working.

#### **Regulators are neither a “good” nor a “bad” thing but lack of independence is a serious issue**

A number of conclusions can be drawn out from those observations. First, it is over simplistic to conclude that an independent regulatory body is either a “good” or a “bad” thing.

One significant issue is that creating truly independent regulatory agencies in the Sub-Saharan African context is proving extremely difficult if not impossible. This becomes problematic if regulatory agencies seek to exert too much influence over the sector, by either over-ruling the contract rules (such as tariff rules in the **Mali** contract) or stifling incentives (as in **Zambia**). Of particular concern are the cases where a regulator is super-imposed onto contractual arrangements without being party to the contract: to assert its existence (and powers), the regulator may be tempted to take decisions that can affect the contract negatively. This is why an alternative solution may be to be as specific as possible when establishing the contractual arrangements (in particular on tariff and quality rules) and rely on other mechanisms to resolve disputes as they arise, as this was successfully achieved in **Senegal**. In that case, the asset-holding company performs some regulatory functions (such as monitoring performance) but they share an interest with the operator to see the reforms succeed, hence their willingness to iron out disputes as they emerge in order to advance with the reforms.

Nevertheless, regulatory agencies can play an important role in providing effective sector oversight, irrespective of whether the service is publicly or privately managed. They can help ensure that incentive mechanisms work well, provided that such incentive mechanisms are in place. They can act as a focal point for the sector, gathering, analysing and publishing comparative data on sector providers. By doing so, they can improve the overall transparency of the system and help consumers become more informed about the value of the service they are receiving and improve customer protection. This has been particularly effective in **Zambia**, where the regulator has been publishing very good comparative data for a number of years and has established Water Watch Groups in poor areas of Lusaka and other towns that have assisted customers in obtaining better levels of service and responsiveness from the Commercial Utilities. Finally, regulators can also play a role in sector development by contributing their sector expertise to recommend sector improvements.

## 4.4 Making sure the poor benefit

A number of mechanisms have been identified in the cases as means of helping the poor have access to affordable water services, which we discuss on the basis of two main questions:

- How can tariffs help the poor?
- How can coverage be increased?

#### *How can social tariffs help the poor?*

#### **Standpost tariffs and small social blocks can help focus consumption subsidies on the poor**

All of the countries with the exception of **Uganda** have rising block tariff structures with a so-called “social block” aiming at providing cheaper water for a minimum usage.

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Whether this kind of tariff structure actually helps the poor is the subject of considerable debate: analysts have pointed out that in some cases, such tariff structures can harm the poor because they would tend to consume more water (either through collective connections or standpipes) or would often be unconnected, therefore unable to benefit from this kind of cross-subsidy (“exclusion risk”). Besides, if the size of the first block is too high (i.e. a relatively large monthly consumption gets subsidised), the risk of inclusion then becomes high, with a large number of relatively well-off people benefiting from the subsidy.

In the countries under review, there is a relatively high number of people per connection (22 on average throughout the case studies) which means that the poor are likely to be connected to collective connections or get water from standpipes which consume high water volumes, or not get water from the network at all. If the standpipe tariff was not set at a distinct level, this could be particularly stifling for poor customers as standpipe operators would have to pass on the higher costs of consuming in the highest block onto their customers (as this is the case in Cote d’Ivoire for example). However, we note that all tariff structures in the cases under review include a specific standpipe tariff which is equal to the social block tariff (if there is one) or slightly above. Even Uganda which does not have a block tariff structure has a specific standpipe tariff and DAWASA has a specific tariff for water supplied by tankers to non connected population.

The size of the social block varies from 5 m<sup>3</sup> in DAWASA (**Tanzania**) to 20 m<sup>3</sup> in **Mali** or **Senegal**. It is also in those two countries that there is the sharpest difference in tariff level between the first block and the second block. Because the size of the first block is quite high, the risk is that the significant subsidy provided to consumers in the first block could actually benefit quite a lot of consumers who are relatively well-off. An optimal size for the first block (if a block structure is adopted) would usually considered to be 6 m<sup>3</sup> per month, which would be sufficient to provide a minimum of 40 litres per capita per day to a family of 5 people.

**Whereas a private operator under a concession contract may have a disincentive to serve customers consuming within the first block, an affermage contract would maintain its incentives**

A potential issue with social tariffs is that they can provide a disincentive for private operators to extend into poor areas if the costs of supplying the service are not adequately covered by tariff revenues. Whether private operators are exposed to this risk or not depends upon the structure of the contract. This would typically be the case in concession contracts, such as in **Mali**, although in that case, the concessionaire did have quite strong coverage targets which compensated this disincentive (even though, tariff levels proved too low to be sustainable following regulatory interventions).

By contrast, in **Senegal**, the form of private sector contract, an affermage, introduces strong incentives to serve the poor or at least, to not discriminate against serving them. Indeed, the private operator receives a fixed remuneration for each cubic meter of water sold, depending only on the average tariff, not on the social tariff. Therefore, it has no disincentive to serve the poor who are billed based on the social tariff. The only commercial risk that could materialise for the operator would be if tariff revenues were not sufficient to cover its remuneration because of a large proportion of customers being billed at the social tariff. In Senegal, however, this has not occurred because the operator’s remuneration only represents about half of the total tariff and the increase in consumption at the social tariff has been more than compensated by an increase in consumption in the higher consumption blocks. Any reduction in tariff proceeds resulting from an increase in consumption at the social tariff would need to be borne out by SONES, and would reduce the sector’s self-financing capacity in the long-term. Therefore, the addition of new low-income customers has no negative impact on SDE’s finances. Collection rates for these populations also appear to be good, particularly for those who are served through privatised standpipes, which have a good payment record. Therefore, the private operator has every incentive to treat all customers in a similar way.

#### *How can service coverage be increased?*

One potential disadvantage of social tariffs is that those subsidies only benefit those who are presently connected to the system and not the unconnected, who tend to form the majority of poor people.

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In many cases, helping the poor is therefore likely to be better achieved through providing greater access to reticulated supplies, which in turns gives access to lower priced water services. There are a number of means of increasing coverage of water services and of improving access.

#### **Many countries have put emphasis on subsidised domestic connections...**

A number of the cases have subsidised connection schemes usually with qualifying criteria:

- In **Uganda**, NWSC recently launched a connection fund whereby 10% of revenues for water tariffs is channelled directly into the fund. All new connections are financed from this fund making water services far more accessible to all consumers particularly the poor.
- In **Tanzania**, there is a first time domestic connection fund which offers free connections subject to having more than 3 water points. Unfortunately due to problems with the lease contract this fund has not been operational. In addition the fund was more likely to benefit the better-off as poor households rent rather than own property and hence may have only a single water point.
- In **Senegal**, there is a social connection fund but only those who have a title over the land can benefit which can of course prevent the poorest from receiving access. Notwithstanding this, the number of new social connections over the last 3 year has averaged over 16,000 per annum.
- In **Burkina Faso**, in the last few years, ONEA has provided an average of 5,000 new connections per year (which was an objective of the management contract). This number is set to increase dramatically with the implementation of the 50,000 new connection programme in the context of the Ouagadougou water supply project at very reduced rates compared to previously.

#### **... whilst pushing for the parallel development of stand posts /water kiosks**

In some cases, an emphasis has and is being placed on extending the coverage and availability of stand posts/water kiosks:

- In **Zambia**, a Devolution Trust Fund was created with the aim of extending the coverage of water kiosks as the primary means of helping poor people to have access to reasonably priced water services.
- In **Uganda**, NWSC has significantly increased the number of stand posts and water kiosks in recent years with growth of 12% and 13% for 2002-03 and 2003-04 respectively.
- In **Senegal** funding was provided for stand posts and there have been around 4,000 new ones per annum over the last three years.
- In **Burkina Faso**, ONEA has adopted an active policy of developing public supplies via stand posts since the early 1990s in order to keep the cost of extending coverage at an affordable level. Overall, the percentage of population served by public stand posts grew from 15% in the early 1990s to 52% by 2002 whilst the number of stand posts grew from 183 to 1,691.
- In **Kenya**, a Trust Fund has been established to facilitate access of disadvantaged Kenyans to reliable and affordable water services. The trust fund is set up as a grant facility currently working out the eligibility criteria, application and monitoring processes.

#### **Coverage targets can be a powerful incentive for private operators...**

In **Mali**, one of the primary objectives of the concession contract was to improve coverage and there are key targets covering increasing connections (42% in 5 years and 233% in total) and increasing the volume of water sold to domestic customers. This mechanism has proven effective during the first few years of the contract although the future of the concession contract is now very uncertain. This was the only contract where the private operator had the obligation to invest in developing the network and providing new connections. With the difficulties encountered by concession contracts worldwide, it is likely that schemes where expansion is subsidised, such as Output Based Aid schemes, are going to be more effective for expanding coverage under private sector management.

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#### **... But exclusivity clauses should be limited in order not to displace small-scale operators**

One critical issue in the PSP debate is whether operators should have exclusivity over service provision in their service area. This is something that the private operators often prefer in order to preserve the value of their long-term investments but the risk is that the private operators would then be tempted to expel existing small-scale suppliers who provide very useful services to the poor, at least in an interim period until coverage can be increased. This problem can be avoided by introducing limits to the exclusivity clause.

In **Mali** the concession contract grants exclusivity to EDM over its service area. However, EDM is also required to sell water in bulk to private standpipe operators or to authorise and regularise water resale by domestic users thereby imposing limits on the degree of exclusivity. This arrangement was probably done in realisation that given existing low coverage levels, restricting alternative forms of supply would be unfeasible. It provides for suitable protection of the concessionaire's revenue base as well as allowing the poor suitable access to water services.

## 4.5 Improving donor support

In all of the cases covered in this study, there has been considerable donor involvement. For example, in **Burkina Faso**, donors are providing about 80% of sector funding, mostly through grants. In addition, there has been considerable technical assistance to the countries in the study, with the German agencies playing an important role in that respect.

#### **Donor coordination has for the most part been improving over recent years...**

A significant issue is that of donor coordination, given that all countries involved receive financial assistance from a large number of donors, with up to 15 donors active in the water sector in many countries reviewed.

In several cases, donor coordination committees have been established and in some cases, these are led by the German Development Cooperation, such as in **Mali** or in **Kenya**. In **Tanzania**, although coordination mechanisms are in place, there is no explicit leadership and this is perceived as lacking, with Germany being considered as a potential sector leader. In **Zambia**, there is reasonably good donor co-ordination in the sector (and joint letters from donors have been a feature for a number of years) and there is an informal donor meeting on the water sector every two to three months.

In almost all countries, a move to a Sector Wide Approach (SWAp) to planning in the sector, involving all donors and the line Ministry, is being considered. This has been implemented with good success in **Uganda**, where the adoption of a Sector Wide Approach (SWAp) has proven effective to coordinate donors' actions. The lead donor for the water sector (currently Germany preceded by Sweden) has signed a MOU with the Government on behalf of the other donors and there is a Donor Coordination Meeting (DCM) once a month with all donors in the water sector represented.

Donors have also coordinated their actions relatively well for large investment projects. For example, in **Burkina Faso** where the number of donors is particularly high, coordination has been particularly good for the Ziga dam project and associated investments to improve Ouagadougou's water supply.

#### **...but coordination of technical assistance remains an issue, particularly when PSP is in place**

With respect to technical assistance, coordination is sometimes more problematic however. For example, in **Burkina Faso** again, the multiplication of short term technical assistance contracts supporting ONEA, running in parallel with the service contract with a private operator, has proven somewhat disruptive for the service provider which was theoretically in charge of coordinating all technical assistance to ONEA. In the context of this type of private service contract, it may have been preferable to keep other forms of technical assistance down to a minimum and instead, allocate funds



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to the short-term investment fund or to the performance fee for the private operator so that it could deliver some of those actions.

#### **Donors have often advocated private sector participation as a critical component of overall reforms, and sometimes as the main one...**

In many cases, donors have been pushing for a high-powered form of private sector participation (as in **Mali** or **Tanzania**) as a last resort solution to improve the sector's performance, when retrospectively it appears that the necessary conditions for such forms of PSP were not in place at the time (see Section 4.2 for more details). In other places, such as in **Burkina Faso**, donor pressure in favour of PSP has been met with resistance by the Government which only agreed to a mild form of PSP (a short-term service contract) in order to obtain funding for a large investment program to increase water supplies for the capital Ouagadougou. Such donor focus on introducing private sector participation is also reflected in the large number of PSP option studies that has gone on in recent years, which led to nothing due to political resistance to privatisation (this has particularly been the case in **Kenya** and in **Zambia**).

Donor conditionality linked to PSP has proven somewhat short-sighted in certain cases, especially when donors have pushed for higher-powered forms of PSP when the overall conditions were not favourable. Conditionality may be better focused on introducing mechanisms for improving and monitoring performance throughout the sector rather than on a particular form of PSP for the main utility in the country. This could help in improving the sustainability of the reforms, and avoid linking an entire sector-wide support program to the success of a particular transaction.

#### **Donors have not always provided ongoing support after the PSP contract was let...**

Donor emphasis on high-powered PSP arrangements has not always been followed by donor support down the line. In **Mali**, donor support, which had been substantial before and during the preparation of the reforms, stopped after privatisation on the basis that they could not finance a private sector operator (donor support to the sector as a whole, including to the Ministry on water resource management issues continued nevertheless). It appears that the presumption that the private operator could finance all investments was far-fetched and that alternative financing models, such as Output-Based Aid models for financing service expansion could have been considered as an alternative to take advantage of the private sector's efficiency in managing funds. A funding programme to support coverage expansion, either under an affermage or a modified concession contract, should therefore have been considered.

#### **... Although such ongoing donor support, where provided, proved to be a critical success factor for PSP arrangements**

By contrast, donors have made a major contribution to the success of the reforms in **Senegal** by funding large and much needed investments to secure water availability and network extensions. Regular and coordinated joint sector and programme reviews and appraisals have helped implementing sector reform and investments programmes in a structured manner. The World Bank took the lead but other donors, and especially bilateral donors such as AFD or KFW, were also deeply involved in the process. As a result, donor contributions were well coordinated and responsive to the Government's needs and objectives. The existence of an asset-holding company, SONES, facilitated the injection of donor funds into the system in an efficient and timely way, well suited to sector needs (although delays on certain investment projects were also experienced). Donors (in a coordinated manner) have also played a very substantial role in ensuring the success of the arrangements over time, by playing a quasi regulatory role and helping in ironing out differences in views before they would risk turning into disputes.

Ongoing donor support also proved key to the success of management contracts, such as in Malindi (**Kenya**) or **Burkina Faso** where donors funded most of the investments required to deliver service improvements and network extension.

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It appears therefore that a key success factor for implementing PSP arrangements successfully is donor coordination and ongoing support. As far as possible, procedures (for tendering or fund disbursement) should be harmonised in order to reduce the level of complexity in PSP transactions. Beyond the transaction, coordinated donor supervision can play a powerful role in ensuring a smooth implementation of the arrangements and resolving disputes as they emerge: **Senegal** provides an interesting example where this has been done very successfully and where donors have played a significant role in monitoring the implementation of performance targets and resolving disputes.

#### **Donors can play a significant role to support the reform process overall and in particular, service extension in towns that fall outside the perimeter of the main operator**

There is sometimes a tendency for donors to focus on the largest projects, mostly relating to national companies or companies serving the capital city and ignoring the situation in other urban centres which may contain the majority of the urban population. For example, in **Mali**, it is important to note that EDM only provides services to about 10% of the Malian population (with a 60% coverage rate in towns that contain about 15% of the total population). The concession preparation process followed by ongoing conflict between the private operator and the Malian Government regarding the terms of the contract and EDM's obligations have mobilised a considerable amount of time and resources by comparison with the overall impact of EDM's contribution. The dispute is a big drain on the resources of the Ministry, donors, EDM and the regulator.

The German cooperation has put particular emphasis on maintaining a broad outlook in the water sector. In most countries reviewed, it has not only focused on the large scale private sector deals (although it usually is part of the leading group of donors) but has also been supporting overall sector reforms and service development in smaller towns. In terms of sector reform, this is demonstrated by its significant involvement in countries, such as in **Uganda** or **Zambia**, which have accomplished significant progress in terms of introducing sector reforms and incentive schemes with very limited private sector participation. In countries where private sector participation is more mainstream, such as in **Senegal**, the German cooperation has provided funding to water supply projects in small towns in the interior of the country, which contributed to redressing the balance between the capital city and secondary towns, given that much of the main donor funding efforts were focused on resolving Dakar's water supply problems. In **Mali**, German donors have sought to support the sector as a whole and support provided by KfW over the years has contributed to the development of an innovative support mechanism for small private or community operators in semi-urban centres which has brought substantial benefits.