

WATER SUPPLY AND SANITATION IN ZAMBIA: REFORM AND REGULATION

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Abstract

Zambia has undertaken water sector reforms over the past decade. The introduction of an autonomous water supply and sanitation regulator, National Water Supply and Sanitation Council, has provided a new institution with tools for improving sector performance. As with any reform, citizen confidence with new arrangements will depend on their perceptions of sector improvements, including water quality and network expansion. This study shows that performance monitoring (and associated rewards) has begun to have a positive impact, though much remains to be done.

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1 INTRODUCTION

Zambia has been regulating the water sector for the past six years. Prior to the formation of the water supply and sanitation regulator, National Water Supply and Sanitation Council, NWASCO, regulation of water supply and sanitation services was not handled by an autonomous (or independent) agency but via ministerial oversight.

This paper outlines the details of Zambian Water Supply and Sanitation regulation highlighting the set-up of the regulator, tools for regulation, their effectiveness and impact on the sector over a five year period, giving specific examples. The information used to build this case was obtained through field visits.

Baietti, Kingdom and van Ginneken (2006) draw upon eleven case studies within Africa, (including water utilities in South Africa, Uganda, Burkina Faso and Tunisia) to identify key features of institutional settings that promote well-performing suppliers as follows¹:

1. The reform process is inherently political and requires the full commitment of its policy makers to correctly balance financial and political objectives.
2. Success is often unattainable without reforming the external environment, with emphasis on the role of the owner.
3. Fundamental reforms are not a quick fix and cannot be substituted by private sector participation.
4. There must be an adherence to financial sustainability objectives.
5. Other external stakeholders may be important to balance potentially conflicting objectives of politicians.
6. Certain decisions must be left to utility managers.
7. Separating functions and arm's length transactions are important elements of the institutional setup.
8. Customers can be an important voice for improving performance.

Sector regulators can play an important role in fostering sector reforms. The study of Baietti, Kingdom and van Ginneken (2006) recommend the following best practices for promoting improvements in operating performance²:

- Establishing a national benchmark system to improve performance;
- Creating incentives through intergovernmental transfers;
- Promoting arrangements with multiple stakeholders;
- Establishing governments as guarantors for utility performance; and
- Establishing performance-based agreements between the owner and the utility.

The present case study of Zambia augments the lessons they offer.

1.1 Sector Reforms

Prior to the sector reforms of 1994, the Zambian water sector was characterised by lack of guiding policy, very low cost recovery, poor human resource both in terms of quality and quantity, decrepit infrastructure, and little or no investment for network expansion. As a result of these problems, the water infrastructure throughout the country deteriorated to such an extent that over half of the water produced was lost before reaching the consumer. Lack of clearly defined roles and jurisdictional responsibilities led to both policy gaps and duplication of efforts in the sector system. There was no legislation to guide water and sanitation service provision and the management of water resources was not handled in a comprehensive manner. On the whole, the entire sector was disorganised and service provision undesirable. The quality of water produced soon became a health hazard.

In 1994, the Government committed itself to transforming the water sector so as to ensure quality provision of water supply and sanitation, at affordable costs and on a sustainable basis. In 1997, the Government passed a National Water Policy in which seven sector principles were outlined as follows³:

1. Separation of regulation and executive functions;
2. Devolution of supply responsibility to local authorities and private enterprise;
3. Promotion of appropriate technology for local conditions (in terms of ability to pay)
4. Increased Government, (GRZ) spending on Water Supply Services, WSS.

5. Creation of effective institutions through human resource development and capacity building;
6. Fully cost recovery through user charges (over the long term);
7. Separation of Water Resources Regulation from Water Supply and Sanitation, (WSS), Regulation.

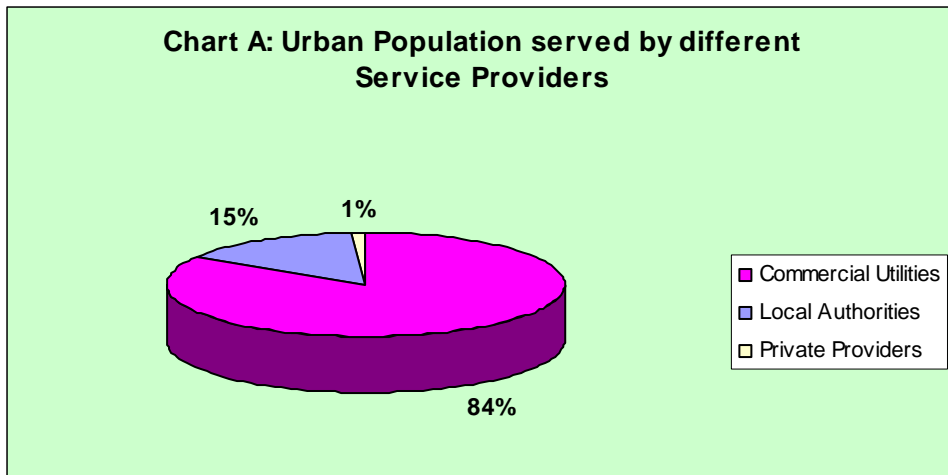
The 2006 *United Nations Development Program Report, Getting Africa on Track to Meet the Millennium Development Goals, MDGs on Water and Sanitation: A Status Overview of Sixteen African Countries* states that “Zambia has the potential to achieve the MDGs for water supply⁴. It has a sound enabling environment of reformed institutions, policy and strategy, and commitment to developing coherent WSS programmes. However, success will depend on whether the current policies and strategies are implemented and momentum maintained, particularly as relates to sector financing and cost recovery.” Unlike the United Nations Development Program, UNDP report, the current study focuses on the role of the regulatory institution in implementing some of those principles—promoting cost-effective delivery of WSS.

1.2 Sector Structure

To separate regulatory and executive (policy) functions within the water supply and sanitation sector, NWASCO was established as an independent regulator to implement policy. The powers of NWASCO are vested in the Water Supply and Sanitation Act No. 28 of 1997.⁵ Policy implementation involves creating rules and priorities that sequence tasks and (effectively) involves policy development. However, the broad national objectives are determined at the ministerial level.

With the powers vested in the Water Supply and Sanitation Act, NWASCO now acts as agent for attaining the seven sector principles earlier outlined, that are the pillars for the water sector reforms. Water supply and sanitation service provision has been devolved to the Local Authorities and commercialised.

There are three categories of water and sanitation service providers. These are depicted in the chart below⁶:

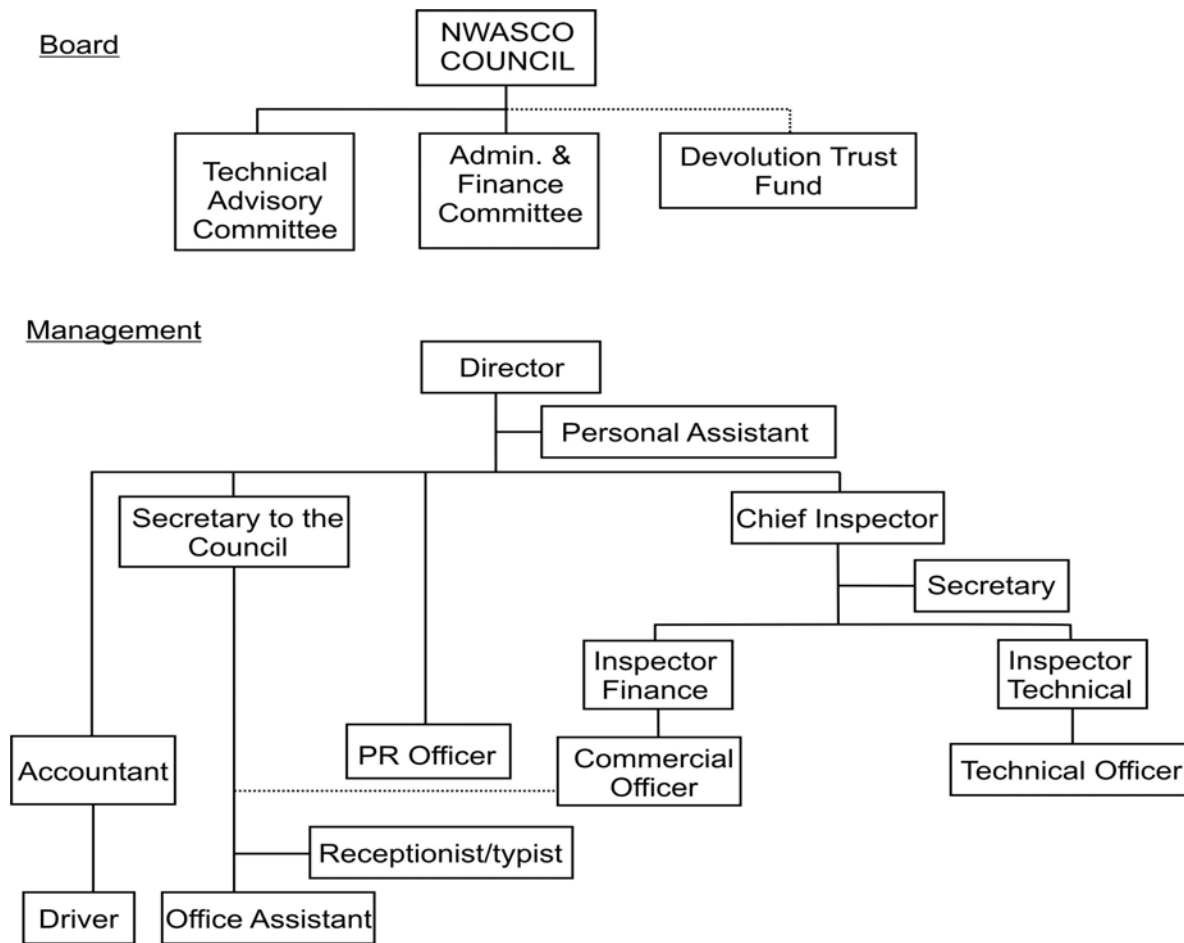


Ten Commercial Utility Companies, providing water supply and sanitation services to the Central, Southern, Northern, Western, North-Western Lusaka and part of Eastern provinces of Zambia. These are fully owned by Government, with the Municipalities as the sole shareholders and service 84% of the population. In addition, some local municipalities supply water and a few private providers meet specialized demands.⁵

2.0 INTERNAL ORGANISATION OF NWASCO

The *UNDP Report* raised questions about government funding of WSS investments and support for institutional capacity building. NWASCO has a lean structure with 15 staff: 8 professionals and 7 support staff as depicted in chart B below:

Chart B: Organisation Structure



The Council management is headed by a Director. It has three departments, namely Inspectorate, headed by Chief inspector, Administration, headed by Secretary to Council and Public Relations department as shown in the diagram.

2.1 Part-Time Inspectors

To complement the lean structure, part-time inspectors have been engaged from all over the country. Based in the various parts of the country, these career people work in various sectors but are engaged by NWASCO on a part-time basis to monitor water supply and sanitation service provision in their areas. Before being assigned responsibilities, they undergo intensive induction and training. Part time inspectors are effective in monitoring service provision because they are a part of the communities serviced by the monitored

utility companies. The resulting data reports become the foundation for identifying baselines and determining performance trends.

2.2 Water Watch Groups

Even with the part time inspectors in place, it is important to promote public participation in the oversight process. Customer involvement ensures their protection and promotes speedy complaint resolution. Water Watch Groups have been established, comprising 6 to 9 volunteer customers from a particular service area. These groups operate within the delegated powers and receive minimal financial support from NWASCO for transport and communication expenses.

3.0 TOOLS FOR REGULATION

Soon after its establishment, NWASCO concentrated on developing the necessary tools to be used for regulation. Key staff realised that without instruments, regulation would be ineffective. The tools fall into seven categories: licensing requirements, performance guidelines, information collection/analysis, subsidies, special service supervision (for problem-cases), benchmarking, and standard setting⁷. As Ehrhardt, Groom, and O’Conner (2007) note, regulating state-owned enterprises is problematic because rewards and penalties are difficult to implement⁸. The fundamental problem is one of national funding for utilities whose tariffs are 30 percent below operating and maintenance expenses. Nevertheless, NWASCO has taken initial steps to create an environment that promotes cost containment, network expansion, and service quality improvements.

3.1 Licensing

All water supply and sanitation service providers obtain an operating license from NWASCO as per requirement by law. The licenses contain certain conditions to which providers have to adhere. Failure might mean a penalty in terms of a fine or indeed suspension of the licence. The providers have to meet certain basic requirements before obtaining a license. The maximum period for a license is 10 years. The providers pay a monthly license fee of 2% of

their billing. The license fees are the major source of NWASCO's funding, contributing over 75% to the overall budget.

3.2 Guidelines

NWASCO has formulated a number of guidelines on which the service providers can be measured. The guidelines help water utility companies to operate within the framework of the Water Supply and Sanitation Act of 1997. They also facilitate the dissemination of information to the public on service delivery expectations. Some of the guidelines developed are on minimum service levels, accounting standards, water quality, human resource development, extension of service to peri urban, reporting, cooperative governance, investments, and financial projections. Managers at the Commercial Utilities (CUs) are trained on how to use these guidelines to ensure understanding and effectiveness. These detailed guidelines are provided to CUs and can be accessed by the public for a small fee.

3.3 NWASCO information system-NIS

In regulation, access to accurate information and management information systems is crucial. The agency, with the help of cooperating partners, developed the NWASCO Information System (NIS) to make regulation easier and cost effective.

The NIS was conceived not only to satisfy the needs of NWASCO but also to offer an advantage for the CUs. Decision-makers can only manage what they measure, so the information system provides a building block for good performance. Thus, the system focused on the information needs of the decision makers and the public⁹.

The information gathered in the NIS serves NWASCO as a support tool to monitor and compare the performance of the providers and their compliance with specified requirements. This has increased the regulator's efficiency in monitoring the service providers. Based on the collected information, well informed advice can be given to the political decision makers without excessive effort and in a format that can easily be understood.

NIS ensures that timely and reliable data are available for the providers as they strive to fulfill NWASCO requirements. The data required by NWASCO is the same data the provider's management needs for effectiveness of service provision. Providers can use the reports generated from the NIS to check on their compliance. In the same vein, improved information benefits customers and other support agencies.

3.4 The Devolution Trust Fund (DTF)

As provided for in the Water Supply and Sanitation Act of 1997, the Regulator has the powers to establish a fund to assist in extending water supply and sanitation services to the urban poor. The DTF was formed autonomous from NWASCO. It has separate Management and a lean structure (five staff). CUs are called to present funding proposals.

Based on the selection criteria outlined in the DTF guidelines and their current performance, they are awarded funds for extending services to the urban poor. A well maintained database is used to keep track of the progress regarding water supply and sanitation service coverage. Because of the successes of the DTF in its mandate, a number of donors have pooled their resources into the basket. Thus, the DTF has the potential to be used as a strong reward for strong performance—to the extent that NWASCO recommendations are key determinants of incremental external funding for CUs.

3.5 Special Regulatory Supervision-SRS

Special Regulator Supervision is an enforcement tool used on providers whose performance deteriorates beyond acceptable limits. NWASCO signs a SRS agreement with the provider in which it is stipulated that during the period of the SRS, NWASCO shall monitor closely all operations of the provider. Under the SRS, NWASCO can attend Board meetings to monitor internal decisions. Such regulation is clearly intrusive, but it enables NWASCO to closely monitor collection efficiency, quality of service, expenditure patterns, production operations and other activities that have a direct impact on the performance of the provider.

Under SRS, the provider is expected to draw up a plan on how management intends to improve its performance in a particular period of time. Monthly reports are submitted highlighting the progress being made in meeting the planned activities.

A number of CUs have experienced SRS: their performance has improved drastically. The first water company to be put on SRS was Nkana Water and Sewerage Company-NWSC which is now one of the best water companies in Zambia. Refer to the impact of regulation. In another case, Southern Water and Sewerage Company (SWSC) was placed under SRS 2005 - 2006. SWSC is also now among the top three companies.

3.6 Benchmarking (Comparative Competition)

Identifying the need for SRS intervention partially depends on having solid comparative statistics on all CUs. Every year, NWASCO publishes an annual peri urban and urban water sector report. This report not only provides performance details, but also benchmarks and ranks providers. The top three Commercial Utility Companies are commended in the report and awarded during the launch of the Report; the worst performing ones are reprimanded in the report.

This report is the means through which NWASCO disseminates sector information to the decision makers and the public as a whole. With such publications, CUs are forced to compete amongst each other, therefore promoting continuous improvements. Transparency enhances citizen awareness of local performance and provides political leaders with important information for developing sector policy.

3.6 Setting Standards

NWASCO has set certain desirable targets for the water sector in Zambia, which are in line with the MDGs. In order to avoid deterioration of service and ensure continuous improvement and financial sustainability, service providers are required to sign Service Level Guarantees and Agreements with NWASCO. These prescribe intermediate targets for attaining desirable long term outcomes. To ensure maximum consumer benefit, service providers are required to guarantee a specific service standard which may differ among the

various service providers and service areas for a particular provider due to geographical location and the differences in the state of the inherited infrastructure

A Service Level Guarantee is signed at the time of licensing and subsequently every three years. It stipulates the minimum expected service from the providers on which the ruling water tariffs are set. Service providers are therefore mandated to make the service level guarantees public and inform both the consumers and the regulator should they fail to offer the guaranteed service.

Over time, service providers are expected to progressively improve their guaranteed service towards the Required Service Standard. Service Level Agreements are therefore signed between NWASCO and the service providers for the period of 3 years, in which service providers commit themselves to meeting certain targets with stipulated means, within the specified period. Future tariff adjustments are influenced by the progress made by service providers in meeting their targets. Certainly, penalizing non-achievement by denying price increases can compound the financial sustainability problems resulting from below-cost prices.

4. MAKING REGULATION EFFECTIVE

NWASCO has implemented a number of organizational innovations and procedures to make regulation effective.

4.1 Desk Officers (DO)

With its lean structure, NWASCO tries to carefully monitor all the CUs and Local Authorities through the use of Desk Officers. Each of the service providers is assigned a member of staff as DO. As the acronym suggests, the DO is required to have all the relevant information of the provider readily available, so as to do everything possible to ensure continuous improvement in the performance of their provider.

The DO is required to follow up operations of the provider, give regular updates to the other members of staff and raise alarm if things are not heading the right direction. Reprimands or

praises to deserving providers are initiated by the DO. The DO keeps constant contact with their provider, conducts physical inspections and spot checks whenever needed. The DO is also expected to validate information coming from their provider. The introduction of the DO concept is not only effective for monitoring service providers but also enhances Management skills of staff at NWASCO.

4.2 Inspections

NWASCO staff conduct regular physical inspections of the water providers. These inspections are planned at the beginning of each year. Each DO is mandated to carry out at least three inspections of their providers.

During the inspections, providers' are checked on their compliance to license conditions and also improvements being made to service delivery. After the inspection, a provider is given directives with specified deadline to correct areas of non compliance. With the inspections, providers have the opportunity to get expert advice on various aspects of operation.¹⁰.

4.3 Meetings

A number of meetings are held for the service providers to allow them to share their experiences, best practice and learn from each other. A Forum is held for the Chief Executive Officers, CEOs' from the CUs every quarter. Apart from sharing successes and challenges, CEOs have the opportunity to meet and discuss with the regulator and top Government officials on a one to one basis. Because they are at different levels with the CUs, the Local Authorities have their own forum held bi annually. Other fora held are those for the Human Resource Managers; biannually and the media; quarterly. Attention to communication is important for any reform initiatives.

4.4 Human Resource Management and Development (HRMD)

Human resource development is core to any organisation. NWASCO has both internal and external human resource development policies.

Internally, all members of staff are sent for training following the annual plan developed at the beginning of each year. Staff are also exposed to different fora locally and internationally at which they are given different tasks, as a way of enhancing their capacities and knowledge. Special training, outside or within the country is also offered to staff as a way of rewarding performance, since such training is above the ordinary capacity building programme and is motivating.

Externally, NWASCO promotes human resource development for the CUs. This is done by coordinating joint training, facilitating exchange visits and assisting in sourcing for external funds for training. NWASCO also recommends staff from the CUs for various scholarships offered by different international organisations. These recommendations are based on performance. Like the regulator, CUs are also encouraged to use training as a form of reward for high performance and effort thereby retaining and motivating staff.

4.5 Rewards and Penalties

To ensure that there is a continuous improvement in the performance of the CUs, certain rewards and penalties have been instituted. NWASCO can issue an enforcement notice to CUs that do not comply with given directives. It can also fine the CU for certain non-compliance. In worst-case scenarios, NWASCO can suspend the operating license, in which case, the Board of Directors and the Managing Director cease to hold their positions. The Minister of Local Government is requested to appoint a statutory Manager for the period, until an acceptable Board and Managing Director are ushered in.

4.6 Strategic Plan

NWASCO has a Strategic Plan currently running, which covers the period 2007-2009¹¹. The strategic plan sets out to meet the institutions vision of sound and sustainable water supply and sanitation for all, particularly the urban poor. Certain key strategic goals, activities, specific indicators of attaining them and related costs have been spelled out in the strategic plan. The document is accessible to the Government and the public. The important factor about the NWASCO Strategic Plan is that it was internally compiled, thus giving the staff a sense of ownership and wanting to achieve results.

4.7 NWASCO Performance Monitoring and Rewarding System (PMRS)

In order to maintain very high reputation and improve delivery with limited resources, the NWASCO has instituted an internal reward system needs to promote efficiency and innovation. To create such an organizational culture of continuous improvement, a Performance Monitoring and Reward System (PMRS) sets targets, monitors performance and encourages creative problem-solving. Thus, the system promotes a strong sense of team work. The PMRS is designed to reward outstanding performance among NWASCO staff, help determine future pay awards, and identify the need for any disciplinary action for under-performance.

Performance reviews are done quarterly via an internal committee and in plenary sessions with all staff. Weighting of specified targets and scoring is transparent with feedback given in plenary. The performance targets are set by the individuals themselves. However these are polished by other members of staff in plenary sessions. Performance targets are set to fit the criteria of being Specific Measurable Achievable Realistic and Timely (acronym, SMART)¹².

5 IMPACT OF REGULATION (using NWSC and NWWSC as case studies)

5.1 General situation of service delivery in/before 2001

As was noted earlier, CUs serve the most customers. By 2001, there were only nine CUs providing this service, most of which were incorporated either the same year or the year before. The CUs were only able to supply water to 47% of the 84% total population living in their service areas. For sanitation, the coverage was 37%. Although the scenario was better than what prevailed in the late 90s, it was still very poor in terms of hours of supply (at an average of 16 hours per day), consistency and reliability of supply, response to customer complaints, quality of staff and operational and maintenance cost coverage by collections, (at 60%) as per government policy¹³.

For the Local Authorities, the situation was even worse. Of the 15% population living in their service areas, only 9% were served: with undependable service. The quality of information

coming from the Local Authorities was very unreliable because of their inability to isolate water activities (in terms of costs and revenues) from the rest of the Local Authority activities.

5.2 Improvements 2001/02-2005/06

There has been progress. With the establishment of the Regulator, general improvements have been noted. To date, water service coverage for the CUs stands at 73% in 2005/6 from 47% in 2001/2. For the Local Authorities water service coverage has increased to 23% in 2005/6, although the number of Local Authorities has fallen.

Unaccounted for water (UfW) for the CUs has reduced to 48% in 2005/6 from slightly over 51% in 2001/2. Some CUs such as Chipata Water and Sewerage Company (CWSC) now have UfW of about 25%. Average Collection efficiency in the CUs has also increased to 77% in 2005/6 from about 58% in 2001/2.

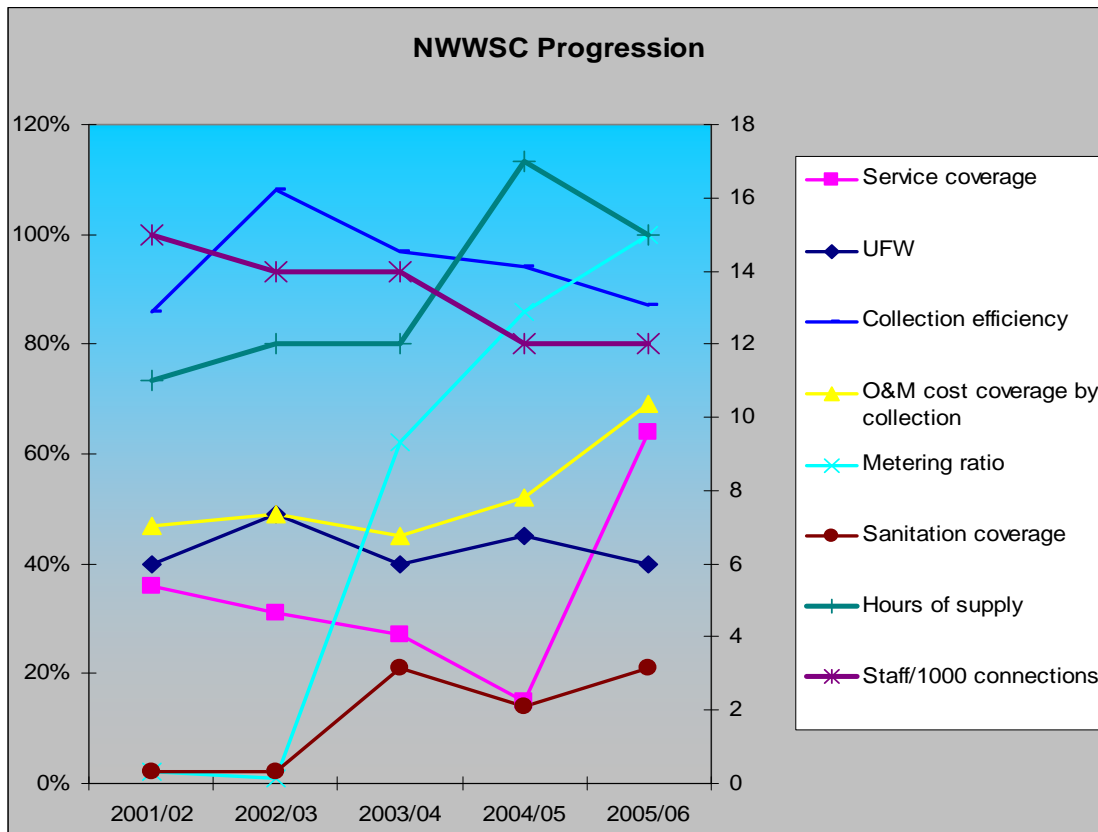
Improvements in the calibre of staff, their efficiency and a reduction in personnel cost in relation to the O&M costs can also be noted. Other indicators such as O&M cost, coverage by collections, hours of supply, and metering ratio also show positive signs on the whole.

5.3 Case Studies

NWWSC and NWSC

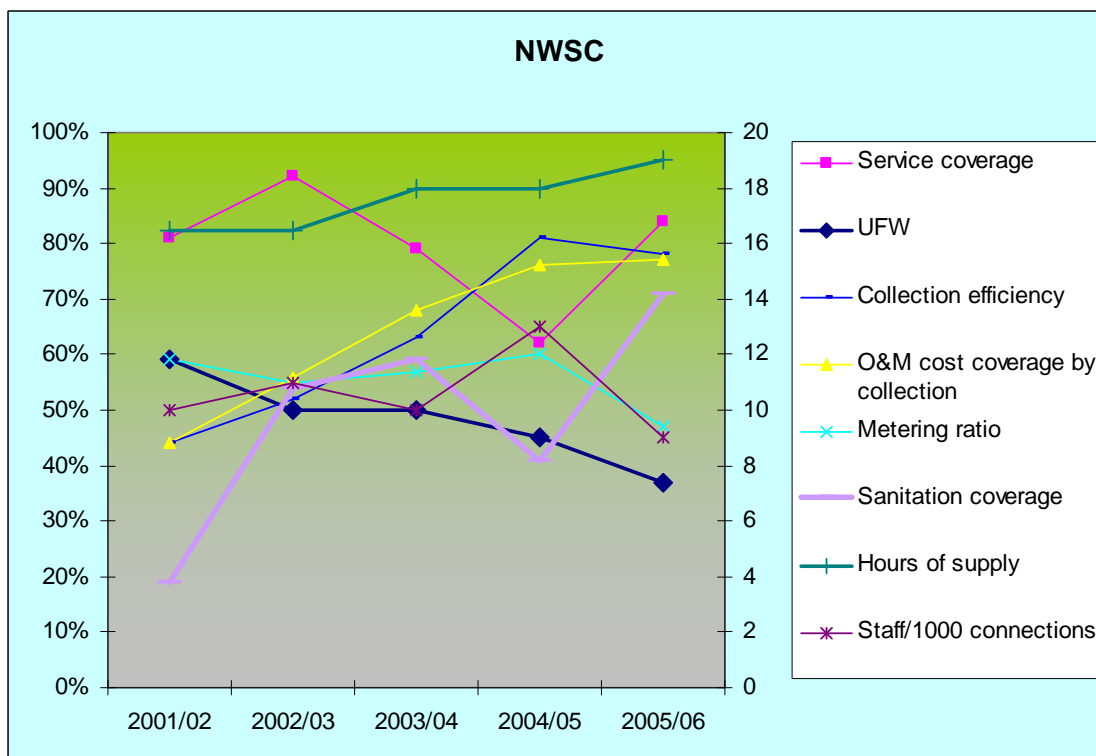
North- Western Water and Sewerage (NWWSC) and Nkana Water and Sewerage (NWSC) were incorporated as Commercial Utility companies in 2001 and 2000 respectively. During their inception, the CUs had a lot of teething problems. Their service coverage, UfW, collection efficiency, hours of supply and metering ratios were below acceptable standards as can be seen from the general picture above.

Chart C



Source: NWASCO Annual Urban and Peri Urban Water sector reports

Chart D



Source: NWASCO Annual Urban and Peri Urban Water sector reports

Most of the indicators on the charts show a positive trend. However when the trend seemed to be negative or constant, it can be attributed to the new challenges that the two companies were facing during the period under review. The major problems were that: North Western experienced a population boom due to the opening of new mines; NWSC merged with AHC MMS, a private company that was supplying water and sanitation services to former mine areas in the province. The merger was due to the poor performance of the privately operated company—but certainly diverted managerial attention from other objectives.

Although both companies depend on Government funds for capital investments, they now are able to meet all their operational and maintainace costs.

5.3 Some Best Practices

A quick examination of specific successes noted during field visits serves to highlight sources of performance improvements as follows:

NWWSC Customer Orientation: Although the company is a monopoly in that area, managers have focused on customers because of the realisation that there is huge potential in maintaining a customer base. Therefore, regular meetings are held with the public and various stakeholders to get feedback on their service delivery, expectations and complaints, besides the day to day complaints procedure.

NWWSC Staff efficiency and effectiveness: To maintain a cadre of highly effective and efficient staff, regular planning meetings and workshops with different categories of staff are held, including cooperate buy-in workshops for all employees. There is a very intensive induction programme for new staff which includes a comprehensive test. Management and all Supervisors are mandated to maintain an open door policy, enhancing easy flow of information, freedom of access and expression. NWWSC has in place a performance rewarding system based on a number of indicators. This system has fostered competition among the districts because rewards are given to districts as a whole and not individuals. The entire team then decides how to best utilise their reward. This has improved team work within the districts. To maintain a certain high level of collection as minimum, Management has put in place a policy of paying salaries only when target collection efficiency of monthly billing is attained.

NWSC Customer Orientation: NWSC also has a very strong inclination towards customers. The strategy used is to conduct regular door to door visits to their customers. This is done by among others the Commercial Manager. That way, the company is able to get feedback on their service and also appreciate the problems that their customers face in terms of service and also payment of water bill. This system has had a significant impact on the collections and quality of service.

NWSC Staff efficiency and effectiveness: NWSC has five divisions headed by Managers. These divisions each hold monthly ‘family meetings’ with their staff to discuss in plenary their achievements and challenges and focus for the month. This has helped improve information flow, identify weakness, recognition strengthens and unity. Additionally, the various Managers are rewarded based on their performance. Such incentives have helped enhance staff efficiency.

6 CONCLUDING OBSERVATIONS

NWASCO's experience has been recognised both within and outside the region. It participates in a number of workshops and conferences where other regulators are present to learn from its experiences. It also accommodates visits from a number of these regulators within the region to assist them develop effective tools for regulation.

In the country, the regulator has gained the recognition and respect of the stakeholder groups: politicians, consumers, and providers. By using internal incentives and promoting performance based incentive systems internally and in the CUs, NWASCO serves as a model for other government agencies.

The major challenge that NWASCO faces however, involves balancing the interests of competing parties: operating managers do not like hard targets; political leaders seek to have time horizons that extend to the next election; current customers wish to maintain current (below-cost) prices; and the media tends to promote controversy by selectively publicising particular events or outcomes. However, some managers are able to out-perform others and benefit from strong incentives; political leaders can be held accountable for campaign promises and many wish to have a legacy of sound infrastructure; un-served (potential) customers are paying much more for non-utility water (in time and money); and the media is in a position to inform the public and opinion-leaders about the status of the water sector.

As the regulatory body responsible for implementing government policy, NWASCO can play a key role in strengthening water utility performance and in obtaining national and external funds for network expansion.

Although the positive trends (as seen from the two case studies) are similar for the rest of the CUs, the system is far from achieving its long term objectives.

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2 CHARTS

Chart A: Urban population served by different service providers in Zambia in 2007	4
Chart B: Organization Structure	5
Chart C : Performance Development of NWWSC from 2001-2005/6 ⁸	15
Chart D: Performance Development of NWSC from 2001-2005/6 ⁸	16
