The prospects in the water sector particularly in the urban areas look a lot brighter with most of the water utilities becoming stable in terms of operations and meeting of operational costs. Most of the utilities are now able to meet the energy, personnel, chemical and other maintenance costs from collections of water charges, however the huge outstanding debt accumulated in statutory obligations and energy costs have to be dismantled and these are slowly being attended to. With the major challenge of being able to fund operations from own resources almost overcome by most CUs, there is now need to urgently work on the financing strategy for infrastructure. The long period of lack of investments in the water sector will require an infusion of substantial amounts of external resources either from the government or the cooperating partners. Provision of infrastructure investment was pivotal to embarking on the water sector reforms in Zambia.

The utilities in the meantime will need to develop the discipline of saving and investing in infrastructure rehabilitation and extension. Though this might be in a small way for a start, it will contribute to building a culture of saving, leading to infrastructural development and serving of new development areas.

With the stabilised operation of water utilities, the human resource is slowly stabilising, intensive and continuous efforts to maintain and develop the critical mass of skilled personnel in all the key areas is required. The utilities will need to make deliberate efforts to commit a portion of the budget to training of staff, beginning with in-house training. Human resource development is a continuous process.

Good management and leadership within the framework of a commercial utility remain key issues for a high performing water utility. The need for vision and drive for better results and disciplined expenditure are highly essential. The remunerations need to be performance based in order to reward excellence, innovation and hard work.

The Providers must continuously increase the relationship between the quality of service and the pricing. This should translate into reducing the amounts consumers have to pay for the inefficiencies of the service providers.

However, with improved quality of service, most customers are willing to pay for a valued service.

It is hoped that providers will continue building up the gains that have been achieved so far, for the good of customers.

Osward M Chanda
Director-NWASCO

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1 Summary of CU performance for the year 2005/6 and trends in the last three years

This chapter is a synopsis of the performance of the service providers in the year 2005/06. It is an abridgement of Chapter 7 where the data is analysed in detail. The indicators highlighted in this sector report are based on the minimum service levels which each service provider agrees on with the regulator. In addition, further indicators have been included to provide the reader with a broader view of the Commercial Utilities’ (CU) performance.

With the baseline data for the peri-urban areas now available, a more accurate national coverage figure has been computed. The national water supply coverage for urban and peri-urban areas (for all providers) now stands at 67% leaving 33% of the urban population without access to clean, potable water (Refer to Table 1 below).

Table 1: National Urban Water Supply Coverage

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Urban Population</td>
<td>4,903,529</td>
</tr>
<tr>
<td>Total Urban Population Serviced</td>
<td>3,270,745</td>
</tr>
<tr>
<td>National Urban Water Supply Coverage</td>
<td>67%</td>
</tr>
</tbody>
</table>

The proportion of the population in the service areas of the different service providers has remained the same compared to the previous year, with 9 CUs accounting for 86% of the urban population in their service areas. 22 Local Authorities (LAs) and 6 Private Schemes* are responsible for 13% and 1% respectively as indicated in Chart A below.

* See Chapter 7.3 for definition
Overview of CUs

From Table 2, it should be noted that the CUs differ considerably in size and operate under varied conditions with some accessing external support while others depend entirely on revenues from water sales. They have been in operation between two and fifteen years.

Table 2: Overview of CUs

<table>
<thead>
<tr>
<th>Commercial Utility</th>
<th>Abbreviation</th>
<th>Start of operation</th>
<th>No. of connections</th>
<th>No. of towns serviced</th>
<th>External Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nkana WSC</td>
<td>NWSC</td>
<td>2000</td>
<td>73,656</td>
<td>7</td>
<td>ADB/DTF</td>
</tr>
<tr>
<td>Lusaka WSC</td>
<td>LWSC</td>
<td>1989</td>
<td>46,152</td>
<td>1</td>
<td>ADB</td>
</tr>
<tr>
<td>Kafubu WSC</td>
<td>KWSC</td>
<td>2000</td>
<td>36,250</td>
<td>3</td>
<td>DTF</td>
</tr>
<tr>
<td>Southern WSC</td>
<td>SWSC</td>
<td>2000</td>
<td>23,734</td>
<td>17</td>
<td>Germany</td>
</tr>
<tr>
<td>Mulonga WSC</td>
<td>MWSC</td>
<td>2000</td>
<td>20,341</td>
<td>3</td>
<td>DTF</td>
</tr>
<tr>
<td>Chambeshi WSC</td>
<td>CHWSC</td>
<td>2003</td>
<td>8,292</td>
<td>10</td>
<td>Ireland</td>
</tr>
<tr>
<td>Chipata WSC</td>
<td>CWSC</td>
<td>1992</td>
<td>5,266</td>
<td>1</td>
<td>Germany</td>
</tr>
<tr>
<td>North Western WSC</td>
<td>NWWSC</td>
<td>2000</td>
<td>4,426</td>
<td>7</td>
<td>Germany</td>
</tr>
<tr>
<td>Western WSC</td>
<td>WWSC</td>
<td>2000</td>
<td>6,616</td>
<td>6</td>
<td>DTF/Danida</td>
</tr>
</tbody>
</table>

* during the past five years to varying degrees

1.1 Overview of General Performance

The sector as a whole has not shown any significant progress towards meeting the sector benchmarks. However, some strides have been made to strengthen management capacities and adhere to corporate governance. Good management and corporate governance coupled with considerable investments in the sector is a pre-requisite for improved and sustainable WSS provision. The national budget continues to reflect low government priority in funding the WSS sector. It is hoped that this situation will improve in the near future.

The main challenges are:

- Low sanitation coverage which requires significant investments towards extension of services.
- Improvement of water quality by all providers
- Decreasing the high UfW which currently stand on average at 48% causing a huge loss of potential revenue for service providers
- Human resource development needs to receive more attention
- Government investment to the sector has to be increased significantly.
- The commercialisation of WSS services in Luapula, Eastern, and Lusaka provinces.

However, the few notable achievements were:

- Water supply coverage improved tremendously as a direct impact of the Devolution Trust Fund (DTF) (see Chart 1).
- Almost all the CUs showed improvements in cost coverage by collection despite the increased O&M costs and static tariffs (see Chart 15).
- Most CUs improved the metering ratio with two now meeting the benchmark
### Table 3: Overview of Key Performance Indicators

Table 3 shows the position of each CU with regard to the main performance indicators whereby the fields shaded red indicate unacceptable results and yellow stands for above average, but still insufficient. The green shaded field indicates that the benchmark set by NWASCO has been achieved. The arrows next to each field show the trend for the reporting period compared to 2004/05.

<table>
<thead>
<tr>
<th></th>
<th>UPW [%]</th>
<th>Water Quality [%] Compliance</th>
<th>Metering Ratio [%]</th>
<th>Water Service Coverage [%]</th>
<th>Sanitation Coverage [%]</th>
<th>Hours of supply</th>
<th>Staff per 1,000 connections</th>
<th>Collection efficiency [%]</th>
<th>O+M Cost coverage collection [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>NWSC</td>
<td>37</td>
<td>91</td>
<td>47</td>
<td>84</td>
<td>71</td>
<td>19</td>
<td>9</td>
<td>78</td>
<td>77</td>
</tr>
<tr>
<td>LWSC</td>
<td>55</td>
<td>81</td>
<td>37</td>
<td>65</td>
<td>9</td>
<td>11</td>
<td>11</td>
<td>81</td>
<td>78</td>
</tr>
<tr>
<td>KWSC</td>
<td>57</td>
<td>60</td>
<td>8</td>
<td>95</td>
<td>89</td>
<td>15</td>
<td>8</td>
<td>58</td>
<td>74</td>
</tr>
<tr>
<td>SWSC</td>
<td>55</td>
<td>80</td>
<td>75</td>
<td>82</td>
<td>22</td>
<td>17</td>
<td>11</td>
<td>90</td>
<td>83</td>
</tr>
<tr>
<td>MWSC</td>
<td>59</td>
<td>90</td>
<td>19</td>
<td>89</td>
<td>89</td>
<td>15</td>
<td>8</td>
<td>59</td>
<td>60</td>
</tr>
<tr>
<td>WWSC</td>
<td>40</td>
<td>49</td>
<td>15</td>
<td>46</td>
<td>26</td>
<td>11</td>
<td>14</td>
<td>90</td>
<td>70</td>
</tr>
<tr>
<td>NWWSC</td>
<td>40</td>
<td>95</td>
<td>100</td>
<td>62</td>
<td>21</td>
<td>15</td>
<td>12</td>
<td>87</td>
<td>55</td>
</tr>
<tr>
<td>CHWSC</td>
<td>60</td>
<td>60</td>
<td>0</td>
<td>46</td>
<td>11</td>
<td>8</td>
<td>18</td>
<td>72</td>
<td>38</td>
</tr>
<tr>
<td>CWSC</td>
<td>26</td>
<td>95</td>
<td>100</td>
<td>60</td>
<td>31</td>
<td>24</td>
<td>11</td>
<td>83</td>
<td>91</td>
</tr>
<tr>
<td>Av.</td>
<td>48 (w)</td>
<td>78 (s)</td>
<td>39 (w)</td>
<td>73 (w)</td>
<td>32 (w)</td>
<td>15 (s)</td>
<td>**</td>
<td>77 (w)</td>
<td>77 (w)</td>
</tr>
</tbody>
</table>

#### Interpretation of Colors:

- Red: Worse than the relevant average and benchmark not achieved
- Yellow: Better than the relevant average but benchmark not achieved
- Green: At least “acceptable” benchmark achieved

(w) Weighted average
(s) Simple average

* no benchmark defined
** different benchmarks depending on size of company, therefore no comparison to average
1.2 CU Performance Ranking

Table 4 shows indicators used to rank the CUs, as well as the respective weighting. The weights reflect how critical the indicator is to the quality of service and the financial viability of the CU.

Table 4: Performance Indicators - Weighting

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Quality</td>
<td>20 points</td>
</tr>
<tr>
<td>Collection efficiency</td>
<td>20 points</td>
</tr>
<tr>
<td>Metering ratio</td>
<td>15 points</td>
</tr>
<tr>
<td>Hours of supply</td>
<td>15 points</td>
</tr>
<tr>
<td>O+M cost coverage by collection</td>
<td>15 points</td>
</tr>
<tr>
<td>UFW</td>
<td>10 points</td>
</tr>
<tr>
<td>Staff per 1000 connections</td>
<td>10 points</td>
</tr>
<tr>
<td>Regulator’s perception</td>
<td>10 points</td>
</tr>
<tr>
<td>Sanitation coverage</td>
<td>05 points</td>
</tr>
<tr>
<td>Water coverage</td>
<td>05 points</td>
</tr>
</tbody>
</table>

A simple weighted ranking of the performance of the CUs using the indicators in Table 3 (page 7), gives an indication of their relative performance as tabulated in the following table:

Table 5: Ranking of CUs

<table>
<thead>
<tr>
<th>Commercial Utility</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Western WSC</td>
<td>1</td>
</tr>
<tr>
<td>Chipata WSC</td>
<td>2</td>
</tr>
<tr>
<td>Southern WSC</td>
<td>3</td>
</tr>
<tr>
<td>Nkana WSC</td>
<td>4</td>
</tr>
<tr>
<td>Mulonga WSC</td>
<td>5</td>
</tr>
<tr>
<td>Western WSC</td>
<td>6</td>
</tr>
<tr>
<td>Lusaka WSC</td>
<td>7</td>
</tr>
<tr>
<td>Kafubu WSC</td>
<td>7</td>
</tr>
<tr>
<td>Chambeshi WSC</td>
<td>9</td>
</tr>
</tbody>
</table>

Congratulations to NWWSC for obtaining first prize!!!

SWSC gets a pat on the back for coming in from 7th place last period to claim 3rd position. NWSC with the effect of the merger has dropped from first position to fourth. A caution to KWSC for the drop in performance.
1.3 Comments and Recommendations for each CU

Chambeshi WSC
- Recruited some qualified and skilled staff.
- Service level deteriorated.
- Poor management and corporate governance led to inability to access pledged funds from DCI. Unclear demands made by DCI also delayed progress.
- Highest UfW, that must be reduced.

Kafubu WSC
- Poor management drastically affected performance.
- Need to improve the extremely low metering ratio.
- Unacceptably high UfW must be reduced.
- Reduced revenues and low collection have resulted in further reduced cost coverage.
- Need to take advantage of new development areas that have remained un-serviced.
- Water quality in southern part of Ndola remains extremely poor.

Chipata WSC
- Overcame their management problems.
- Personnel costs continue to be excessive.
- Low number of qualified staff.

Leaking valve contributing to UfW

Dam wall in Nyimba

Vandalised pipe
Summary of CU performance for the year 2005/6 and trends in the last three years

**Lusaka WSC**
- Extended service to new development areas, though progress is extremely slow.
- Need to restructure in order to have a leaner management structure and bring down the continued very high personnel costs.
- Service levels declined in certain areas, urgent need to improve the production capacity in order to meet the growing demand in new development areas.
- Need to reverse heavy rationing and erratic water supply in certain areas.
- Need to improve on metering ratio.
- High UfW must be reduced.

**Mulonga WSC**
- Only CU that is up-to-date with meeting statutory obligations related to personnel.
- Managed to control costs.
- Need to address the high UfW.
- Must improve the extremely low metering ratio.
- Need to improve collection efficiency.
- Unstable management and poor corporate governance, especially that the Board has been unchanged for a long time.

**Nkana WSC**
For most of the reporting period, Nkana and AHC-MMS operated as separate entities until the last three months when the merger was effected. This has affected the Nkana WSC indicators.
- Merger was well managed.
- Good performance rewarding system.
- Long outstanding issues with customers under AHC (Luanshya and Chingola) were resolved.
- Among the lowest in terms of UfW though still unacceptable. Can bring this lower.
- Staff efficiency is poor, particularly Luanshya has a bloated workforce.

**Getting water from an underground source**

**Sand for filters**
Summary of CU performance for the year 2005/6 and trends in the last three years

Southern WSC
- Highly commended for coming from the lowest in collection efficiency to highest.
- Improved management and corporate governance.
- Need to deal with commercial losses.
- Water quality deteriorated in some areas.

North Western WSC
- Maintained good performance but could do better.
- Made the most strides in sanitation coverage.
- Commended for reaching 100% metering ratio.
- Good staff efficiency.
- Slackened in collection.
- Staff turnover was high.
- Percentage of disconnected customers continues to grow, need to find ways to bring them back on the billing system.

Western WSC
- Collection efficiency improved.
- One of the lowest metering ratios
- Poor financial management and corporate governance.
- Lowest water service coverage, need to extend services.
- Water quality has generally been a problem, poor water quality monitoring. Need to implement monitoring program.
- Percentage of disconnected customers continues to grow, need to find ways to bring them back on the billing system.
The ten year review of the National Water Policy of 1994 continued through the Ministry of Energy and Water Development (MEWD). The first revised draft policy is yet to be completed and the wider stakeholder consultation can only start on the basis of the first draft. This status report will thus focus on the implementation of the 1994 National Water policy particularly the commercialization progress in the remaining local authorities, financing of infrastructure investment, government spending on water and Human Resource Development.

The Government of Zambia passed the Water Supply and Sanitation Act, 1997 thereby delegating and mandating the local authorities to provide water and sanitation services in the respective areas. Consequently fifty (50) local authorities have gone ahead to establish commercial water utilities either as joint ventures or single entities to provide water and sanitation services. The remaining twenty two local authorities are still running the water and sanitation services directly through the works departments. The commercialization process has lagged behind in these areas due to lack of funds to support the process.

In Central Province the African Development Bank (AfDB) has been supporting the seven local authorities in the institutional reforms and infrastructure rehabilitation. A water company has been incorporated as a joint venture of all the seven local authorities in the province under the name of Lukanga Water and Sewerage Company limited. The Board of Directors has been holding a number of consultative meetings with the stakeholders in the province and it is hoped that the company will be operational by December 2006.

The Eastern Province, which currently has only Chipata operating as a commercial utility, is receiving support from the German Government to commercialise the service delivery in the rest of the towns in the province. The commercial viability study has been completed and consultations were undertaken with stakeholders on the preferred institutional arrangements. The German support includes a limited scope for infrastructure investment in the rehabilitation of facilities in some towns to be determined as well as technical support to the establishment of an Eastern Province Commercial Utility.

In Lusaka discussions to merge the three towns of Kafue, Chongwe and Luangwa which are in Lusaka Province into Lusaka Water and Sewerage Company are underway with a joint implementation team established to facilitate the process of incorporation. There is no external support to this process.
Infrastructure funding to the sector has been a major concern. There is need for a very deliberate investment policy by government as well as an increase in government funding for the water sector to address the deficits in infrastructure development in relation to the growing population. Besides the support from the German Government in Southern Province and North-western province, the AfDB in Central Province, the proposed support of the World Bank in Lusaka and DANIDA in Western Province, there are no other significant infrastructure financing in the sector. This is despite the very run down infrastructure and escalating population in the urban areas.

Financial viability in the sector is continuing to improve with six (6) of the nine (9) commercial utilities operating in Zambia reaching operational cost coverage by the end of 2006. However, this is adversely affected by the non payment for services by government institutions. The arrangements that have been put in place for collecting the debt through the Ministry of Finance and National Planning are not working as the system is bureaucratic and to a large extent not implemented on merit. Until there is a sure commitment from government to meeting its obligations for the services, it will be very difficult to meet full cost recovery in the water sector. The government could reduce on its infrastructure investment requirements to the water utilities by paying for water promptly to the utilities.

Another critical key to the success of commercial water utilities is skilled human resource needed for effective management of institutions. The commercial utilities have endeavored to recruit qualified personnel, however, due to the limited capacity to pay competitive salaries, many of the qualified skilled personnel tend to be attracted to other private firms. This challenge is most pronounced in North-Western, Copperbelt and Lusaka Provinces. NWASCO has been facilitating for the water utilities to institutionalize in-house training which seems to hold the key to successful human resource development in water utilities. The in-housing training programme initiated through training of trainers has worked very well for the utilities that have implemented it. There is still a challenge for the rural based commercial utilities to attract the skilled personnel to serve in rural towns. Increasingly more water utilities are introducing performance rewarding systems to motivate enhanced performance among staff.
Poverty levels in Zambia have risen throughout the 1990’s. The statistics clearly demonstrate that poverty has increased not only in income terms but in terms of practically all non-income dimensions as well. These dimensions include social services like access to education, medical, water and sanitation. The Living Conditions Monitoring Survey (LCMS) of 1998 (CSO, Lusaka, 1999) indicates that the general decline in the economy has adversely affected people, particularly those living in the peri-urban and Low-Cost areas. Statistics from the Baseline study (2005) indicate that about 65% and 72% of the residents of peri-urban and low-cost areas respectively do not have access to sustainable water supply and acceptable sanitation.

Given this situation, efforts are being undertaken through the Fifth National Development Plan (FNDP) to increase allocations to the sector. There is also heightened interest from cooperating partners, notably the German government through KfW and GTZ, DANIDA and Irish Aid in Northern Province – to improve service delivery for peri-urban and low-cost areas.

### 3.1 DTF-Support to Commercial Utilities

The Devolution Trust Fund (DTF) has been financing projects on a pilot scale for CUs to improve water supply since 2003. Funds are provided to CUs to extend their services to peri-urban areas. A total of about 120,000 people in low-income areas have since benefited in terms of safe and adequate water supply from these projects. Out of the six pilot projects, the last two were implemented during the period under review (see Table 6). During the pilot phase, detailed procedures and guidelines were developed to make DTF operations more transparent and accountable. The pilot phase has since ended and full-scale implementation is currently underway.
The establishment of the DTF as a basket fund targeting peri-urban and low-cost areas has been lauded as the most significant initiative the government has taken to extend water supply and sanitation services to these areas. Consequently a number of cooperating partners, have made financial commitments to support the government achieve its objective. So far about 8.8 million EUROS have been mobilised by the DTF from KfW, DANIDA and the EU for financing implementation of WSS projects through the CUs. There was very good response from the CUs during the first call for proposals in January 2006 and the DTF approved nine projects for financing valued at K4.2billion.

### Table 6: DTF Funded Pilot Projects in 2005/06

<table>
<thead>
<tr>
<th>Location</th>
<th>Period</th>
<th>Amount (US$)</th>
<th>Funds</th>
<th>Target Population</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWSC: PP-Zambia &amp; Kawama, Chililabomwe</td>
<td>2005/2006</td>
<td>63,000</td>
<td>DANIDA</td>
<td>16,000</td>
<td>Construction of 8 kiosks, rehabilitation of water distribution network &amp; capacity building</td>
</tr>
<tr>
<td>KWSC: Chipulukusu, Ndola</td>
<td>2005/2006</td>
<td>62,000</td>
<td>DANIDA</td>
<td>18,000</td>
<td>Construction of 8 kiosks, rehabilitation of water distribution network &amp; capacity building</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>125,000</td>
<td></td>
<td>34,000</td>
<td></td>
</tr>
</tbody>
</table>

DANIDA- Danish Development Cooperation

#### 3.2 Aquatis Information System

The Baseline Study on WSS in all peri-urban and low-cost areas in Zambia was recently completed in January 2006. One of the key outputs of the Study is the Aquatis Information System which contains demographic and WSS information for all the low-income urban areas in Zambia. The Aquatis Information System will help the sector to have reliable information on which to base plans for interventions.
4.1 Internal Developments
NWASCO increased its staff compliment from 13 to 15 with the creation of two new positions – commercial and technical officers - under the inspectorate section. This will strengthen NWASCO’s monitoring capacity.

Performance Monitoring and Rewarding System (PMRS)
A European consultant once said, “NWASCO is the island of efficiency in the Water Sector”. In order to maintain this very high reputation and improve delivery within limited resources, it is imperative that capacities are used most efficiently and innovation is promoted within the organisation.

With the aim of promoting a culture of excellence among the employees, for the continuous improvement of the organisation and individual skills, a Performance Monitoring and Rewarding System (PMRS) was initiated. The mainstay of the PMRS is setting of targets, rewarding good performance and encouraging innovation.

NWASCO encourages service providers to adopt a similar approach.

4.2 Major Innovation in Regulating Providers

4.2.1 Part-time Inspectors
The ten (10) accredited part-time inspectors undertook inspections and spot checks of most of the providers throughout the country. This has in particular assisted in improving the quality of information on the status of service provision under local authorities and private schemes.

4.2.2 Special Regulatory Supervision
The SRS for Southern Water and Sewerage Company (SWSC) was extended due to a sudden decrease in billing and collection and serious allegations of fraud by some members of staff. SWSC has since increased the number of staff in Livingstone as one of the measures to remedy the situation. NWASCO will therefore continue to closely monitor SWSC.

Chambeshi Water and Sewerage Company (CHWSC) was also placed on SRS due to management problems and chronic erratic water supply in a number of districts. Issues of corporate governance are also being addressed to improve the situation.

4.2.3 Accounting Guidelines
In February 2006 NWASCO issued Guidelines on Accounting, which seek to achieve among other things the following objectives:

1. To narrow the areas of difference and variety in accounting practice among the CUs, for easy comparison,
2. To harmonise the maintenance of records and reports,
3. To harmonise reports with the entry fields in the NWASCO Information System (NIS).

The guidelines were designed in full view of the reporting standards set by NWASCO.
4.2.4 Water Quality Guidelines

One of the main service level issues regulated by NWASCO is the quality of water supplied to customers since it has important health and cost implications.

Drinking water quality is defined in the Zambian Standard ZABS 190 which prescribes the different limits to the key water quality parameters. To guarantee and ensure that water supplied is potable, there is need for providers to have a monitoring programme in place which will ensure that an adequate number of tests are done and that the water complies with the standard.

NWASCO promulgated the Water Quality Guidelines in 2005 and implementation started in January 2006. For the Local Authorities (LAs), the implementation of the guidelines has been delayed until 2007 in order to build the necessary capacity. However, the public health inspectors of the Ministry of Health do monitor water quality of the water supplied by the LAs periodically.

4.3 Tariff Adjustments Approvals

NWASCO approved tariff adjustment requests for six (6) CUs, namely, Lusaka, Kafubu, Western, Mulonga, North-Western and Southern Water and Sewerage Companies. This adjustment will allow five (5) of the CUs to cover their O&M Costs by the end of 2006.

Table 7: O&M Cost Coverage after Implementation of new Tariff in 2006

<table>
<thead>
<tr>
<th>Company</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>KWSC</td>
<td>96%</td>
</tr>
<tr>
<td>LWSC</td>
<td>118%</td>
</tr>
<tr>
<td>MWSC</td>
<td>115%</td>
</tr>
<tr>
<td>NWWSC</td>
<td>87%</td>
</tr>
<tr>
<td>SWSC</td>
<td>103%</td>
</tr>
<tr>
<td>WWSC</td>
<td>101%</td>
</tr>
</tbody>
</table>

Tariff applications for Chongwe and Samfya District Councils were also approved, bringing them in line with the other Local Authorities.

4.4 Monitoring Service Providers

Detailed inspections were carried out as planned in all the nine commercial utilities, the six private schemes and the Local Authorities in Central, Eastern and Lusaka Province.

In addition, spot checks were undertaken on a regular basis particularly in problem areas in order to constantly monitor the situation.

Generally, there have been improvements in the service delivery and compliance to guidelines and standards by most CUs. The areas still requiring attention were highlighted to concerned providers. The water quality has improved in areas serviced by private schemes due to the compliance to earlier directives.
4.5 Licensing

Following Government’s decision to handover AHC-MMS to Nkana Water and Sewerage Company (NWSC) at the end of the World Bank funded Mine Township Services project, the operating licence for AHC-MMS was transferred to NWSC with effect from 1\textsuperscript{st} January, 2006. The reorganisation of NWSC was well handled.

The options study to commercialise service provision in the other towns of Eastern Province was concluded and it is envisaged that progress will be made towards forming a provincial Commercial Utility with Chipata as the Headquarters.

The provision of services in Kabwe has greatly improved under the statutory management of Nkana Water and Sewerage Company following the suspension of the license of Kabwe Municipal Council. The operations will be handed over to the newly formed Lukanga Water and Sewerage Company, which will cover all towns of Central Province.

4.6 Consumer Complaints

During the period 2005/2006, Commercial Utilities showed resolve to expeditiously attend to consumer complaints. Compared to the previous year, 25\% less or 38,852 complaints were received (Table 8). The drop in complaints handled by CUs is attributed to the general improvement in customer relations.

NWSC recorded the highest number of complaints by virtue of having taken over areas serviced by AHC-MMS, which had numerous unresolved complaints at 12,669. LWSC was second highest at 10,252. SWSC was magnanimous in the way it handled complaints, by resolving almost all including carry-overs.

Water Watch Groups continued handling numerous unresolved complaints, more so with the increased coverage of service areas in Ndola, Mafubila, Mpika and Lusahya. NWASCO also received a number of complaints directly. The number of complaints handled by the different WWGs were:

- Lusaka WWG- 150
- Chingola WWG- 123
- Kitwe WWG- 120
- Kasama WWG- 40

The nature of complaints across all the nine Commercial Utilities included:

- Billing
- Service interruptions
- Poor sanitation or sewer spillage
- Delay in connecting new applicants
Human Resource Management and Development has for years been neglected especially in the water sector. This is because of the difficult that service providers face in assessing funds for training considering their current financial difficulties.

The Government of Zambia with the help of Danida and the Royal Netherlands Embassy has responded to the need to invest in training that would be more practical and relevant to the industry by developing a funding strategy under the Ministry of Science, Technology and Vocational Training, MSTVT. The MSTVT has established the TEVET Fund as a mechanism through which this system would be implemented. This Fund will be managed by the Technical, Vocational and Entrepreneurship Training Authority, TEVETA.

The areas of focus for the Fund are pre-employment training, in-service training, informal sector training, and infrastructural development. NWASCO will coordinate CUs to access these funds for in-service training.

### 4.7.2 Mediation

NWASCO successfully mediated on a dispute involving Southern Water and Sewerage Company (SWSC) and the Weights and Measures Department regarding a malfunctioning water meter.

### 4.7.3 CEO and LA Fora

The Chief Executive Officer (CEO) Fora for CUs and Local Authorities’ Consultative Meetings were held quarterly. Issues of concern to both the providers and the regulator were addressed. These fora are also used for the exchange of experiences and sharing of best practices.

### 4.8 Sharing of Regulatory Experience

Delegation of experts mostly from regulatory bodies from South Africa, Malawi, Kenya, Uganda and Tanzania were hosted by NWASCO. NWASCO also continues to attract visits from a number of cooperating partners and consultants wanting to learn from NWASCO’s experiences.
5 Water Watch Groups (WWGs) - Involving the consumers in regulation

With demands ever increasing to involve consumers in WSS monitoring and regulation country wide, NWASCO has set up four more Water Watch Groups (WWGs) to bring the total number to eight.

Currently, WWGs are operating in Chingola, Kasama, Kitwe, Luanshya, Lusaka, Mpika, Mufulira, and Ndola.

It is NWASCO’s aim that all areas being serviced by a CU or Local Authority have a WWG in place.

Since the establishment of the first WWG in Lusaka in 2002, responsiveness from both providers and consumers has increased, notably from the number of complaints resolved. All WWGs have remained proactive, being a constant reminder to providers of their obligation to deliver quality water supply and sanitation services. The WWGs have also intensified sensitisation of consumers on their rights and obligations.

Some outstanding WWG achievements in 2005/2006

- The Lusaka WWG facilitated the setting up of a Lusaka Water and Sewerage Company Office in Chunga after cases of vandalism and non-payment of bills in the area. This was attributed to the lack of presence of the provider in the area. This resulted in improved customer relations and higher collections by LWSC in the area.

- The Kasama WWG managed to quell planned protests in Kasama over lack of public consultations before implementing a new tariff.

The collaboration between NWASCO, the Energy Regulation Board (ERB) and the Communication Authority of Zambia (CAZ), culminated into the formation of the Regulatory Alliance. The alliance will enhance the sharing of best regulatory practices, which includes the transformation of WWGs into Consumer Watch Groups (CWGs) that are intended to act as a one stop shop and cover issues across these three sectors. As a first step, the Lusaka Consumer Watch Group (LCWG) was set up in March 2006.
6 Sanitation in the peri-urban areas

The World Health Organisation facts and figures report on water, sanitation and hygiene of 2004, reported that 88% of diarrhoeal diseases are attributed to unsafe water supply, inadequate sanitation and hygiene. The report estimated that about 1.8 million people die every year from such diarrhoeal diseases especially in developing countries. Zambia is no exception to poor sanitation related mortalities as evidenced by the numerous cholera outbreaks and subsequent deaths in various parts of the country in the recent past. Between 1999 and June 2006, the Ministry of Health reported a total of 34,271 cholera cases and 1020 deaths resulting from the disease. Despite this fact, sanitation continues to receive less attention and support from all actors.

For decades now, sanitation has been viewed as a household affair. Service providers and the government have not dedicated enough of the much needed resources to foster improvement. To this effect access to adequate sanitation and the general coverage remains stagnant and insignificant. In the low-income areas, the most widely used sanitary facilities are the pit latrines, many of which are not properly constructed and maintained. Those that are not well lined are the major cause of underground water contamination considering that in a number of peri-urban areas water wells are located very close to the latrines, posing a health hazard to lives of the people.
With the shortcomings of the conventional sewerage system and considering the complexity of most peri-urban areas, on-site sanitation is so far the most appropriate solution to improve sanitation in these areas. Service providers, particularly the CUs, have taken leadership in their service areas to promote various improved sanitation options. Examples of strong initiatives that can be cited include the piloting of Ecological Sanitation projects by NWWSC and the proposed introduction of a sanitation charge on the water bills by LWSC. The latter intends to fund sanitation interventions with the small surcharge.

Service providers have a major role to play in improving the access to enhanced sanitation systems in low-income urban areas by information dissemination as well as mobilising resources. NWASCO is closely advising the service providers on the best practice for increasing access to improved sanitation.

The sanitary systems need to have the following characteristics if they are to be considered improved:

- Be private or shared (but not public).
- Effectively prevent human, animal or insect contact with excreta.
- Be convenient for the user.
- Provide privacy, security and dignity.
- Ensure a clean and healthful living environment at home and in the neighbourhood of users.
- Be maintainable from a technical and financial perspective.
7 Comparative performance of providers

7.1 Commercial Utilities (CUs) Performance Comparison

This section highlights the comparative performance of the CUs and shows the trends in the sub-sector. The comparison induces competition by benchmarking among water utilities leading to increased efficiency and enhanced performance. By benchmarking, each utility is motivated to improve its own previous performance as well as to outperform the other CUs. Benchmarking is also used by NWASCO to set absolute sector targets to be achieved by the CUs in a progressive manner. The comparative data will also allow the consumers to compare the quality of service they are getting with other areas and to continue to demand better service provision.

Comparison of NWSC as a result of the merger with AHC

With effect from 1\textsuperscript{st} January, 2006, Nkana Water and Sewerage Company (NWSC) took over the operations of former AHC-MMS. In order to rationally compare the performance of NWSC after the merger with AHC-MMS and to assess whether the merged CU is going in the right direction, an artificial comparison benchmark has been set by combining the indicators for the two CUs before the merger (on the assumption that the merger had taken place in the year 2004/5). In the analysis for NWSC, this artificial performance has therefore been used as recalculated in Table 9. It is also important to note that AHC-MMS and NWSC operated as separate utilities for nine months and only operated as a single company for three months in the reporting period. The performance of NWSC has therefore been greatly affected by the performance level of AHC-MMS.

\begin{table}[h]
\centering
\caption{Impact of Merger between AHC-MMS and NWSC}
\begin{tabular}{|l|c|c|c|}
\hline
\textbf{Indicator} & \textbf{Before merger NWSC 2004/05} & \textbf{Artificial Benchmark AHC+NWSC 2004/05} & \textbf{After merger NWSC 2005/06} \\
\hline
No. of Connections & 23,966 & 70,891 & 73,656 \\
Population Served & 287,330 & 721,077 & 827,480 \\
Water Supply Coverage & 61.7 & 81.7 & 83.5 \\
Sanitation Coverage & 40.7 & 70.5 & 70.6 \\
Water Production (in mil' m3) & 33.1 & 114.1 & 116.8 \\
UfW & 45% & 37% & 37% \\
Metering Ratio & 60% & 30% & 47% \\
Total Billing (in mil' ZMK) & 12,343 & 45,888 & 52,659 \\
Total Collection (in mil' ZMK) & 9,784 & 37,018 & 41,188 \\
Collection Efficiency & 76.2 & 79.2 & 78.2 \\
No. of Staff & 302 & 672 & 649 \\
Staff per 1000 Connections & 13 & 10 & 10 \\
Billing/Staff/Month & 3.4 & 5.7 & 6.8 \\
Av. Personnel Costs/Staff/Month & 1,519,604 & 2,736,746 & 2,807,405 \\
O&M Costs & 12,333.9 & 50,690.6 & 53,387.9 \\
O&M Cost Coverage & 76% & 72% & 77% \\
Cost Coverage at 85% collection & 85% & 77% & 84% \\
\hline
\end{tabular}
\end{table}
7.1.1 Total Population in Service Areas of the CUs

Out of a total urban population of about 4.9 million, 4.2 million live in the service areas of the nine CUs (86%). A small minority of the urban population is serviced by private schemes (about 1%) and the remaining part lives in the service areas of Local Authorities (13%).

Note: Private schemes in the current Zambian context are schemes run by companies which have a different core business (e.g. sugar, electricity production) and provide WSS service to their employees who live on the company’s premises – mostly free of charge as a fringe benefit.

7.1.2 Water Supply Coverage

There was an overall increase in coverage although only four CUs meet the benchmark of acceptable service coverage. However, NWWSC and SWSC have shown significant increases mainly due to the commissioning of 56 and 35 kiosks respectively, in the peri-urban areas which are generally highly populated. The drop shown by CWSC is as a result of the company not being able to match service extensions with new residential and commercial developments in the service area. The increase by LWSC is due to extension of services to new development areas and a database clean-up for peri-urban areas. WWSC has also made efforts to improve services to peri-urban areas.

Benchmark for service coverage in densely populated towns:

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Good</th>
<th>&gt;90%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acceptable</td>
<td>80 – 90%</td>
</tr>
<tr>
<td></td>
<td>Unacceptable</td>
<td>&lt;80%</td>
</tr>
</tbody>
</table>

In sparsely populated towns where it is not economical to extend the pipe network to the periphery, a lower service coverage is acceptable, as reflected in the table below.

Benchmark for service coverage in low density town areas:

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Good</th>
<th>&gt;80%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acceptable</td>
<td>70 – 80%</td>
</tr>
<tr>
<td></td>
<td>Unacceptable</td>
<td>&lt;70%</td>
</tr>
</tbody>
</table>
7.1.3 Sanitation Coverage (by sewer network)

Chart 2 shows sanitation coverage by sewer network among the CUs. Decentralised sanitation facilities are not included in this comparison.

There were practically no investments in the sewerage infrastructure and therefore no improvement. As an exception, NWWSC rehabilitated and extended the sewer network in Zambezi and Solwezi resulting in slightly improved sanitation coverage.

7.1.4 Clustering of Companies

Providers have been clustered as shown in Table 10, based on the water production volumes and population size in the serviced areas. This is necessary since some of the benchmarks vary considerably according to the size of the provider. Therefore the performance of a CU should be compared to another CU of similar in size.

Table 10: Clustering of CUs

<table>
<thead>
<tr>
<th>Cluster</th>
<th>CU</th>
<th>Water Production (Million m³)</th>
<th>No. of Employees</th>
<th>Total Population in Service Area</th>
<th>No. of connections</th>
<th>No. of towns</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NWSC</td>
<td>116.8</td>
<td>661</td>
<td>990,806</td>
<td>73,656</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>LWSC</td>
<td>76.6</td>
<td>513</td>
<td>1,564,986</td>
<td>46,152</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KWSC</td>
<td>54.9</td>
<td>279</td>
<td>444,000</td>
<td>36,206</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>SWSC</td>
<td>18.1</td>
<td>256</td>
<td>294,000</td>
<td>23,734</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>MWSC</td>
<td>16.2</td>
<td>167</td>
<td>224,000</td>
<td>20,341</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>ChWSC</td>
<td>9.3</td>
<td>151</td>
<td>250,747</td>
<td>8,292</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>WWSC</td>
<td>5.3</td>
<td>92</td>
<td>141,186</td>
<td>6,616</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>NWWSC</td>
<td>3.9</td>
<td>53</td>
<td>146,398</td>
<td>4,426</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>CWSC</td>
<td>2.4</td>
<td>58</td>
<td>120,736</td>
<td>5,266</td>
<td>1</td>
</tr>
</tbody>
</table>
7.1.5 Household Connections

On the whole, the number of household connections increased by 7.5% to a total of 213,053. LWSC in particular augmented their number of connections by 5,000 due to extensions to new development areas. A decrease by KWSC is a result of removing customers from the database who were still being billed despite not receiving service.

On average there was a slight drop in water production. Southern and Western Provinces experienced a drought from November 2005 to March 2006 resulting in the indicated decrease in Charts 3 and 4.

The average per capita production as shown in Chart 4 also decreased, indicating use of conservation techniques. The sharp decrease in WWSC is also attributed to a large increase in population that is served by 17 new water kiosks, characterised by low per capita consumption. The reduction for NWWSC is largely the impact of 100% metering ratio leading to water conservation by the customers.
7.1.7 Unaccounted for Water (UfW)

UfW is the expression used for the water lost in the distribution system. It is the difference between the quantity of water produced and the quantity of water billed. UfW consists of the technical losses (e.g., due to leakage) and commercial losses (illegal connections, unbilled customers, wastage on unmetered customers' premises).

UfW still remains a challenge and on average is quite high. NWWSC improved UfW principally because of a newly achieved 100% metering ratio leading to better management of water demand. CUs should strive to urgently improve their metering ratio and be more efficient in water demand management.

It should be noted that the UfW figures are still estimates where metering is less than 100%.

If the high water losses (UfW) are translated into monetary terms, as shown in Table 11, one can get an understanding of the magnitude of the problem and the amount of revenues lost. This should serve as an incentive for each CU to come up with a strategy of realising some of these revenues.

**Table 11: Lost revenues due to UfW in 2005/2006**

<table>
<thead>
<tr>
<th>Total Billing (in mil K)</th>
<th>UfW (in %)</th>
<th>UfW (in mil K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chambeshi WSC</td>
<td>1,433</td>
<td>60.3%</td>
</tr>
<tr>
<td>Chipata WSC</td>
<td>4,009</td>
<td>25.6%</td>
</tr>
<tr>
<td>Kafubu WSC</td>
<td>21,866</td>
<td>57.4%</td>
</tr>
<tr>
<td>Lusaka WSC</td>
<td>45,645</td>
<td>55.2%</td>
</tr>
<tr>
<td>Mulonga WSC</td>
<td>6,236</td>
<td>59.0%</td>
</tr>
<tr>
<td>Nkana WSC</td>
<td>52,659</td>
<td>36.8%</td>
</tr>
<tr>
<td>North Western WSC</td>
<td>3,030</td>
<td>39.5%</td>
</tr>
<tr>
<td>Southern WSC</td>
<td>10,044</td>
<td>55.0%</td>
</tr>
<tr>
<td>Western WSC</td>
<td>1,719</td>
<td>39.7%</td>
</tr>
<tr>
<td>Total</td>
<td>144,264</td>
<td></td>
</tr>
</tbody>
</table>

Benchmark for UfW

<table>
<thead>
<tr>
<th></th>
<th>Good</th>
<th>Acceptable</th>
<th>Unacceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;20%</td>
<td>20 – 25 %</td>
<td>&gt;25%</td>
</tr>
</tbody>
</table>

**Chart 5: Unaccounted for Water (UfW)**

- **CHWSC**: 60% (2004/05), 49% (2005/06)
- **CWS**: 57% (2004/05), 55% (2005/06)
- **KWSC**: 55% (2004/05), 49% (2005/06)
- **LWSC**: 59% (2004/05), 48% (2005/06)
- **MWSC**: 37% (2004/05), 40% (2005/06)
- **NWSC**: 40% (2004/05), 48% (2005/06)
- **SWSC**: 55% (2004/05), 55% (2005/06)
- **NWWS**: 40% (2004/05), 57% (2005/06)
7.1.8 Metering Ratio

Chart 6 shows the metering ratio defined as the metered connections compared to the total connections. Metering is a precondition for charging consumers according to their consumption and thereby ensures an equitable distribution of costs. It is an important tool for controlling consumption and UfW.

Metering ratio in general is still at an unacceptable low level and progress is too slow. In this regard, NWWSC must be commended for reaching 100% metering ratio and NWSC for making strides at metering. CHWSC, with external support, is expected to start metering soon.

7.1.9 Hours of Supply

Chart 7 shows the range of supply hours by the CUs per day.

No significant improvement was made overall. WWSC reduction in average hours of supply is mostly as a consequence of dilapidated infrastructure and poor maintenance. LWSC continued severe rationing in Matero, Chelstone and Avondale. The fact that servicing of new development areas is not matched by a proportional increase in production capacity will make the situation even worse if no immediate action is taken. Apart from LWSC, CHWSC and WWSC, all CUs have acceptable hours of supply.

It should be noted that in some areas not connected to the national electricity grid, the availability of electricity can be an external constraint for the supply hours.
A higher level of supply hours is requested for large and medium sized towns because of a higher demand.

<table>
<thead>
<tr>
<th>Benchmark for hours of supply in large and medium towns (&gt;100,000)</th>
<th>Good</th>
<th>20-24 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acceptable</td>
<td>16-20 hours</td>
</tr>
<tr>
<td></td>
<td>Unacceptable</td>
<td>&lt;16 hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Benchmark for hours of supply in smaller towns (&gt;100,000)</th>
<th>Good</th>
<th>&gt; 16 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acceptable</td>
<td>12-16 hours</td>
</tr>
<tr>
<td></td>
<td>Unacceptable</td>
<td>&lt;12 hours</td>
</tr>
</tbody>
</table>

During the reporting period, major water supply interruptions occurred in

- MWSC due to a pump breakdown at the intake resulting in reduced supply hours in the low cost and peri-urban areas that lasted for 3 months
- SWSC (Choma and Kalomo), NWSC (Kabwe) and LWSC due to the drought which resulted in rationing of water supply in most of the service areas and lasted for about two months.
- WWSC and NWWSC due to poor ZESCO power supply resulting in reduced supply hours in most of their service areas.

Overall there was a slight improvement. However, only one third of the CUs have an acceptable collection efficiency compared to the sector benchmarks below. This is of concern especially since the collection from domestic customers generally continues to be poor. NWWSC, after having maintained a good collection record over the past few years, has slipped. The disconnection policies and debt collection strategies must be applied consistently. CHWSC’s slight reduction is due to some customers boycotting payments for poor service. KWSC, despite the expensive ‘Bill Buster’ promotion exercise, failed to improve collections. MWSC also continues to trail behind. Both CUs need to develop a workable strategy to improve the situation.
Notable improvements were made by SWSC and WWSC. SWSC successfully carried out a vigorous debt collection exercise under the new management. WWSC employed an innovative door-to-door collection strategy.

<table>
<thead>
<tr>
<th>Benchmark for collection efficiency</th>
<th>Very Good</th>
<th>&gt;95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>90-95%</td>
<td></td>
</tr>
<tr>
<td>Acceptable</td>
<td>85-90%</td>
<td></td>
</tr>
<tr>
<td>Unacceptable</td>
<td>&lt;85%</td>
<td></td>
</tr>
</tbody>
</table>

Chart 9 shows the average collection efficiency over three years; it eliminates distortions which might occur during one financial year. The Copperbelt CUs (KWSC, MWSC and NWSC) continue to have poor collection efficiency. Only NWWSC and WWSC have an acceptable average collection efficiency over three years compared to the sector benchmark.

7.1.11 Staff Efficiency

Chart 10: Staff per 1000 connections

Staff efficiency has implications.
Staff efficiency can be measured as “staff per 1000 connections” (Chart 10). The lower the number of staff per 1000 connection the more efficient the company is. Two other indicators i.e. billing per staff and collection per staff have also been analysed in order to adequately compare the staff efficiencies (see Chart 11 and Table 12).

There is little change in the Number of staff per 1,000 connections (Chart 10) on the whole. CHWSC and LWSC are of great concern and need to bring their staff efficiency within the sector benchmark.

A general improvement, however, was made in the billing per staff as shown in Chart 11, notably by LWSC and NWWSC. The decrease for SWSC is as a result of illegal manipulation of the billing system in Livingstone. KWSC stopped billing accounts where people were not receiving service.
7.1.12 Average Personnel Cost Per Staff

Generally the average personnel costs continue to increase at about the same level as inflation rate. NWSC’s high increase is an effect of the merger since former AHC-MMS’s personnel costs were always among the highest. LWSC has by far the highest personnel costs mainly as a result of a bloated management structure. NWWSC effected salary increments in an effort to attract and retain qualified staff.

### Chart 12: Average Personnel Cost/Staff/Month

**Table 12: Observations on Staff Efficiency**

<table>
<thead>
<tr>
<th>Commercial Unit</th>
<th>No. of Staff</th>
<th>Staff/1000 connections</th>
<th>Av. personnel cost/staff/Month</th>
<th>Billing/staff/Month</th>
<th>Collection/staff/Month</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>LWSC</td>
<td>513</td>
<td>11</td>
<td>4.17</td>
<td>7.41</td>
<td>6.01</td>
<td>Highest average personnel costs &amp; too many staff compared to the No. of connections. Urgent need to restructure to bring personnel costs to acceptable level and improve staff efficiency.</td>
</tr>
<tr>
<td>NWSC</td>
<td>661</td>
<td>9</td>
<td>2.99</td>
<td>6.64</td>
<td>5.19</td>
<td>Need to create more synergies from merger. Too many staff compared to the No. of connections.</td>
</tr>
<tr>
<td>KWSC</td>
<td>279</td>
<td>8</td>
<td>2.50</td>
<td>6.53</td>
<td>3.81</td>
<td>Retained good staff efficiency.</td>
</tr>
<tr>
<td>SWSC</td>
<td>256</td>
<td>11</td>
<td>1.71</td>
<td>3.27</td>
<td>2.95</td>
<td>Urgent need to reduce number of staff which has even increased compared to the previous year.</td>
</tr>
<tr>
<td>MWSC</td>
<td>167</td>
<td>8</td>
<td>1.00</td>
<td>3.11</td>
<td>1.83</td>
<td>Increase in No. of staff leading to a reduction in staff efficiency; need to ensure to maintain acceptable standards.</td>
</tr>
<tr>
<td>WWSC</td>
<td>92</td>
<td>14</td>
<td>1.29</td>
<td>1.56</td>
<td>1.40</td>
<td>Slight improvement in staff efficiency; more efforts needed to continue trend.</td>
</tr>
<tr>
<td>NWWSC</td>
<td>53</td>
<td>12</td>
<td>3.49</td>
<td>4.76</td>
<td>4.16</td>
<td>Slight improvement in staff efficiency; average personnel costs still high.</td>
</tr>
<tr>
<td>CWSC</td>
<td>58</td>
<td>11</td>
<td>3.13</td>
<td>5.76</td>
<td>4.80</td>
<td>No improvement! Scope for reducing No. of personnel and urgent need to bring down personnel costs.</td>
</tr>
<tr>
<td>ChWSC</td>
<td>151</td>
<td>18</td>
<td>0.54</td>
<td>0.79</td>
<td>0.57</td>
<td>Staff efficiency still unacceptable. Need to urgently release excess staff.</td>
</tr>
</tbody>
</table>
7.1.13  Water Production Cost

One of the sector objectives is to provide water to everyone at a reasonable price. The production costs are an indicator that measures the efficiency and economic performance of a CU. The production cost of water has a bearing on the tariff that the customer will eventually pay. NWASCO closely analyses production costs in order to prevent that unjustified costs are passed on to the consumers.

7.1.13.1 Cost of Operation

In the water industry the major cost categories associated with production are personnel, chemical, energy and administration costs. CUs should generally focus on these areas in order to reduce on their production cost.

SWSC improved their procurement process by purchasing chemicals direct from the source. This has translated into significant cost reduction. Such an approach is commended and should be emulated by other CUs.

### Table 13: Cost of Operation

<table>
<thead>
<tr>
<th></th>
<th>Personnel Cost (in mil K)</th>
<th>Chemicals Cost (in mil K)</th>
<th>Energy Cost (in mil K)</th>
<th>Other Cost (in mil K)</th>
<th>Total Cost (in mil K)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2004/5</td>
<td>2005/6</td>
<td>% change</td>
<td>2004/5</td>
<td>2005/6</td>
</tr>
<tr>
<td>CHWSC</td>
<td>857</td>
<td>983</td>
<td>15%</td>
<td>93</td>
<td>95</td>
</tr>
<tr>
<td>CWSC</td>
<td>2,027</td>
<td>2,175</td>
<td>7%</td>
<td>68</td>
<td>110</td>
</tr>
<tr>
<td>KWSC</td>
<td>8,067</td>
<td>8,372</td>
<td>4%</td>
<td>1,193</td>
<td>1,469</td>
</tr>
<tr>
<td>LWSC</td>
<td>19,958</td>
<td>25,648</td>
<td>29%</td>
<td>1,825</td>
<td>1,929</td>
</tr>
<tr>
<td>MWSC</td>
<td>1,729</td>
<td>1,996</td>
<td>15%</td>
<td>421</td>
<td>465</td>
</tr>
<tr>
<td>NWSC</td>
<td>20,455</td>
<td>23,683</td>
<td>16%</td>
<td>3,578</td>
<td>4,845</td>
</tr>
<tr>
<td>NWWSC</td>
<td>1,676</td>
<td>2,218</td>
<td>32%</td>
<td>66</td>
<td>83</td>
</tr>
<tr>
<td>SWSC</td>
<td>4,838</td>
<td>5,259</td>
<td>9%</td>
<td>829</td>
<td>670</td>
</tr>
<tr>
<td>WWSC</td>
<td>1,075</td>
<td>1,419</td>
<td>32%</td>
<td>50</td>
<td>53</td>
</tr>
</tbody>
</table>

The companies do not operate under the same environmental and business conditions and therefore it is natural that their cost structures differ to some extent. However, the operational costs of the previous year are used as benchmark for the current O&M costs of each CU.

Personnel Costs as well as other costs have been increasing in general. LWSC has not only failed to reduce the high level of O&M costs but also increased further above the level of inflation. WWSC having been overcharged through faulty ZESCO meters are now on a different energy charge, thus reducing energy costs. NWWSC should watch their costs in particular the extremely high Other Costs. CWSC experienced heavy rains necessitating extra chemical dosage. Only MWSC has made successful efforts to contain costs.

- Red- negative trend
- Green- positive trend

Production costs need to be kept low
### 7.1.13.2 Cost Structure

Most of the small CUs (WWSC, NWWSC, CWSC) have a high percentage of personnel costs due to lack of economies of scale. LWSC as the second largest CU operating in only one town should have much lower personnel related costs. This shows an urgent need to restructure.

NWSC’s high other costs are from high administrative expenses during the merger process, as well as the management fees for the private contract management of AHC-MMS which was still operating the first nine months of the financial year. MWSC continued to have a very large percentage of energy cost.

### 7.1.14 Average Tariff and Unit Operation Cost

It is the policy of the Zambian Government that the water tariffs should reflect the cost of producing the water. NWASCO therefore has the responsibility of ensuring that only justified costs are passed on to the customer.

In an ideal situation, the tariff should at least be equal to the unit operation costs for a CU to avoid an accumulation of debt and to be higher (by about 50%) to be financially viable.

Compared to 2004/05, the average tariff has increased for most of the CUs; however, the operational costs have gone up at the same or even higher rate, which does not lead to an overall improvement in cost coverage.
Average tariffs are still below the average operational costs for all CUs, except CWSC.

SWSC’s billing reduced slightly, consequently bringing down the average tariff. CWSC is the only CU to have slightly reduced unit operational costs, mainly due to reviewed conditions of service.

Note however that the average tariff in Chart 14 is calculated by comparing the quantity billed and the amount (K) billed. With a very low metering ratio among the CUs, the variations do not necessarily reflect the change in the actual tariff during the period since the quantity billed is still an estimate.

A more realistic picture is portrayed in terms of actual tariffs when comparing the water bills charged by each CU at different consumption levels as shown in Table 14.

### Table 14: Comparison of rising block tariffs

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AHC</td>
<td>6,600</td>
<td>27,650</td>
<td>59,850</td>
</tr>
<tr>
<td>CWSC</td>
<td>10,000</td>
<td>35,200</td>
<td>98,500</td>
</tr>
<tr>
<td>KWSC</td>
<td>6,000</td>
<td>25,200</td>
<td>55,200</td>
</tr>
<tr>
<td>LWSC</td>
<td>6,400</td>
<td>24,400</td>
<td>51,400</td>
</tr>
<tr>
<td>MWSC</td>
<td>4,200</td>
<td>25,800</td>
<td>61,800</td>
</tr>
<tr>
<td>NWSC</td>
<td>7,180</td>
<td>30,580</td>
<td>66,980</td>
</tr>
<tr>
<td>NWWSC</td>
<td>9,000</td>
<td>37,400</td>
<td>83,900</td>
</tr>
<tr>
<td>CHWSC</td>
<td>4,200</td>
<td>35,400</td>
<td>80,400</td>
</tr>
<tr>
<td>SWSC</td>
<td>5,200</td>
<td>26,000</td>
<td>63,000</td>
</tr>
<tr>
<td>WWSC</td>
<td>3,600</td>
<td>22,275</td>
<td>50,775</td>
</tr>
<tr>
<td><strong>Average bill (ZMK)</strong></td>
<td><strong>6,238</strong></td>
<td><strong>28,991</strong></td>
<td><strong>67,181</strong></td>
</tr>
<tr>
<td><strong>Average bill (US$)</strong></td>
<td><strong>1.56</strong></td>
<td><strong>7.25</strong></td>
<td><strong>16.80</strong></td>
</tr>
</tbody>
</table>

#### 7.1.15 Operational Cost Coverage by Collection

Generally O&M Cost coverage is stagnating at an unsustainable low level due to a combination of
- low collections (i.e. from GRZ institutions),
- still low tariffs, and
- ever increasing operational costs.

SWSC and CWSC are commended for improving cost coverage through efficient collection. KWSC’s drop in cost coverage is an effect of the cost of the ‘Bill Buster’ promotion which literally had no effect on the collections. None of the CUs meet the acceptable benchmark.
Benchmark for coverage of O + M cost

<table>
<thead>
<tr>
<th></th>
<th>Good</th>
<th>Acceptable</th>
<th>Unacceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coverage</td>
<td>&gt;150%</td>
<td>100-150%</td>
<td>&lt;100%</td>
</tr>
</tbody>
</table>

Comparative performance of providers

Chart 16 shows the cost coverage assuming an acceptable collection efficiency of 85% (benchmark for collection efficiency).

Cost coverage at 85% collection

Cost coverage at 85% collection has on average decreased further, reflecting the high operational costs as well as the low tariff level. The absence of the NWASCO Board during part of the period left tariff adjustment applications pending. Another contributing factor is the CUs failure to win back the large number of customers who have been disconnected for a long time. This effect will be to some extent reversed by considerable tariff increases for six CUs which NWASCO has already approved for the coming period. Further increases are, however, still necessary.
7.1.16 Human Resource Development

It is imperative to invest in human resource development in the sector. Most personnel have basic education or less with minimal skills. CHWSC is applauded for increasing the proportion of skilled personnel.

Generally the quality of data submitted improved. Delays arose from the fact that personnel who had been trained to manage the NIS were no longer in the same positions; therefore, those responsible for data entry were new to the system.

KWSC displayed ineptitude in the submission of data in spite of constant follow up and reminders given.
Apart from Serenje, Chiengi and Chadiza, who did not submit annual reports, reporting by the LAs was good. However, the quality of the data is still a challenge. Record keeping of WSS operations needs to be enhanced. The data in some cases had to be collected and verified through spot checks by NWASCO part-time inspectors.

As a result of deteriorating service provision in Kabwe, the license of the LA to provide WSS services was suspended and the Minister of Local Government and Housing (MLGH) appointed Nkana WSC as statutory manager to operate the WSS systems from December 2004. NWSC was able to improve service provision considerably. Some of the performance indicators include improved service hours from an average of 6 to 18 hours, collection efficiency from about 50% to over 75%, attending to sewer flooding and metering major customers. This is a good example to show that good management practices can make a difference even in a difficult environment with old infrastructure.

The average coverage in LAs serviced areas continues to decline from 45% to 24%. The current institutional arrangement for LAs to provide WSS services does not attract investment. To compound this, asset management is poor.

**Chart 18: Water Supply Coverage (LAs)**

- Coverage % 1999
- Coverage % 2005/06
- Aver 1999
- Aver 2005/06

The average coverage in LAs serviced areas continues to decline from 45% to 24%. The current institutional arrangement for LAs to provide WSS services does not attract investment. To compound this, asset management is poor.
7.2.2 Hours of supply

Average hours of supply have increased slightly mainly due to Zamsif and MLGH support. The average of 8.7 average hours is still far from acceptable.

Chart 19: Average Hours of Supply (LA)

7.2.3 Collection

Collection efficiency has on average increased to 50% from 36%. This is mainly due to slight improvements in service levels in some LAs.

Chart 20: Collection Efficiency
7.3 Private Schemes

There are currently six (6) licensed private schemes:

- Chilanga Cement
- Kaleya Small holding
- KCM-Nampundwe
- Maamba Coalieries
- Zesco
- Zambia sugar

Note: Private schemes are schemes run by companies which have a different core business (e.g. sugar, electricity production) and provide WSS service to their employees who live on the company’s premises – mostly free of charge as a fringe benefit. These are also licensed by NWASCO as per the WSS Act.

Table 16: Performance of Private Providers

<table>
<thead>
<tr>
<th>Name</th>
<th>Population Served</th>
<th>Coverage %</th>
<th>Hours of supply</th>
<th>Number of tests done</th>
<th>% of tests which meet STD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chilanga Cement</td>
<td>3,150</td>
<td>100</td>
<td>24</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>Kaleya Small holding</td>
<td>3,572</td>
<td>95</td>
<td>16</td>
<td>48</td>
<td>85</td>
</tr>
<tr>
<td>KCM</td>
<td>4,558</td>
<td>100</td>
<td>24</td>
<td>88</td>
<td>60</td>
</tr>
<tr>
<td>Zesco</td>
<td>18,610</td>
<td>100</td>
<td>15</td>
<td>508</td>
<td>95</td>
</tr>
<tr>
<td>Maamba Coalieries Limited</td>
<td>23,900</td>
<td>100</td>
<td>9</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Zambia Sugar Plc</td>
<td>15,941</td>
<td>100</td>
<td>24</td>
<td>692</td>
<td>78.9</td>
</tr>
<tr>
<td>Total</td>
<td>69,731</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NA=Data not available

Coverage

Despite an overall increase in the population almost all private schemes have maintained full coverage.

Hours of supply

Apart from Maamba which has limited infrastructure and is under privatisation, all private schemes are within the acceptable benchmark.

Water Quality

Water quality has generally improved but is still unacceptable apart from ZESCO. KCM, Zambia Sugar and ZESCO have put in place structures solely responsible for monitoring water quality.
FEEDBACK FORM ON SECTOR REPORT

In intending to serve you better and have a Sector Report that would meet all your expectations, kindly help us answer the questions below. Then tear off the question card and send it to The Director, NWASCO at the address behind the card.

i. What is your general perception about the sector report? (Kindly tick)

   - [ ] Excellent
   - [ ] Very Good
   - [ ] Good
   - [ ] Average
   - [ ] Poor

ii. How did you like the layout of the Sector Report?

   - [ ] Excellent
   - [ ] Very Good
   - [ ] Good
   - [ ] Average
   - [ ] Poor

iii. Is the information adequate to have a good assessment of Commercial Utilities’ performance?

   - [ ] Yes
   - [ ] It’s Average
   - [ ] No
   - [ ] It’s Poor
   - [ ] Needs work

iv. Did you find the information you were looking for?

   - [ ] Yes
   - [ ] No
   - [ ] Somewhat

v. Do you have any suggestions on what should be included in future reports? Kindly explain.

   ................................................................................................................................................................
   ................................................................................................................................................................
   ................................................................................................................................................................
   ................................................................................................................................................................
   ................................................................................................................................................................
The National Water Supply and Sanitation Council
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P.O Box 34358
LUSAKA