Foreword

This is the second urban and peri-urban sector report that the National Water Supply and Sanitation Council (NWASCO) is publishing. In the first report we had promised an improvement in quality of information in the subsequent reports. It is my sincere hope that you will see a marked improvement in the quality of information presented in this report.

The interest in the previous report was overwhelming with the 1000 printed copies running out within a few months of publication. Therefore, for this report it is our intention to achieve an even wider readership among the stakeholders. This report will not serve its purpose if not widely circulated and read. It should provoke debate and be taken very seriously by the service providers in order to reach a higher level of service provision and substantially improve their performance indicators.

Limited financial resources have hampered efforts towards the implementation of the sector policy objectives, particularly the establishment of commercial utilities in the remaining towns. However, with external support, the establishment of a commercial utility in Northern Province was realised.

We have begun to notice some immediate results from the commercialisation through improvement of service delivery not only in terms of customer care but also on water quality, service provision and cost coverage. This progress brings the sector a step closer to sustainability of service provision. Nevertheless, efforts to extend and improve service provision to the poor have to be increased, particularly sanitation coverage, which has lagged far behind and has much more scope for improvements.

The promotion of principles of good corporate governance by all concerned will ensure efficient and sustainable Commercial Utilities (CUs). In this regard, the Local Authorities as shareholders have the challenge to choose Boards, which can focus on commercialisation and select Management which is able to implement urgent actions in order to fulfil their legal, commercial and social obligations.

Central Government institutions also have to ensure that their decisions do not hamper progress toward efficiency and stability of the CUs. The secondment of all former water personnel from the Councils to the CUs without mitigation has led to significant over staffing which has been a real set-back to the progress in the sector. The situation has been compounded by the failure of Government institutions to pay their water and sewerage bills despite commitment from Central Government.

The government has opened up the management of the water and sewerage service provision to the participation of the private sector and moves to this end have begun with studies on the Copperbelt and Lusaka, looking at the optimal participation of private international operators and the most suitable institutional arrangements. It is very critical that with the experience the country has had in other sectors regarding privatisation, that the negative effects are mitigated through a careful preparation and implementation of the private sector involvement. Stakeholders need to fully appreciate the status of infrastructure and investment requirements to negotiate with the private partners from a position of knowledge and understanding to end in a win-win situation. The reverse results in lopsided contracts, which can be costly, as it has proven elsewhere.

I wish to commend NWASCO management for the diligence in running the Council affairs in the eleven months that we operated without a Council. We have been assured that Government is looking into the amendment of the Water Supply and Sanitation Act of 1997 in order to make it more robust to avoid occurrence of such long lapses.

Osward M Chanda
NWASCO Director
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1. Summary of CU Performance for the year 2002/3

This chapter gives a synopsis of the performance of the service providers in the year 2002/3. The aim of forming Commercial Utilities (CUs) was to transfer service provision to professionals, increase efficiency in operation and customer services.

The indicators highlighted are based on the minimum service levels of which guidelines have been issued and are being implemented. Other indicators of measure included in the service level guidelines, such as staff efficiency, have also been included here to provide the reader with a broader view of the performance of the CUs. This is important in that the CUs are operating under varied conditions with some accessing external support (such as AHC, NWWSC and SWSC) while others entirely depend on the revenue from water sales. These CUs have been operational for different periods of time, with Chipata and Lusaka being the longest existing.

The summary is an extract of chapter 5 where a more detailed analysis is available. This report should be the basis for the shareholders, decision- and policy makers to engage in discussions with the managements of the CUs.

1.1 Overview of General performance

Although a positive trend in water supply and sanitation towards a higher service level and increased efficiency has been observed during the reporting period, there is still significant room for further improvement.

Positive development:

- Response by CUs to customer complaints are significantly improving whereby some CUs have created customer desks directly supervised by top management.
- Water quality has notably improved among CUs but not with local authority operated and small-scale privately owned schemes.
- Service hours have increased steadily among all CUs.
- Commercialisation is progressing with an additional CU being registered in the Northern Province.
- Coverage of O+M cost among the CUs is generally increasing.

The following challenges remain outstanding:

- Water loses are on average still over 50%.
- On average, over 25% of the population in urban and peri-urban areas are not covered by the water supply systems and many more are inadequately served.
- More than two thirds of the population do not have access to adequate sanitation services or installations.
- Collection efficiency is still under 60%, hampering cost recovery in water supply and sanitation provision.
- Government institutions in general still do not pay their water bills although central Government has instructed that they pay.
- Cost of operations have unfortunately increased significantly, particularly the cost of personnel.
- Staff efficiency is unacceptable in a third of the CUs.
- An increased number of local authority operated schemes are on the brink of collapse.

Table 1 indicates the position of each CU in regard to the main performance indicators whereby the fields underlined in red indicate unacceptable results and yellow indicates above average, but still insufficient. The arrows next to each field show the trend for the reporting period compared to 2001/2002.

The green underlined field indicates that the benchmark set by NWASCO has been achieved and a green arrow indicates a positive trend.

Comments: NWWSC and AHC-MMS could not adjust their tariffs as planned because NWASCO had to operate without a Board. Therefore, their progress towards cost recovery was delayed.
## Table 1: Performance Comparison of CUs

<table>
<thead>
<tr>
<th></th>
<th>UFW [%]</th>
<th>Trend</th>
<th>Water Service Coverage [%]</th>
<th>Trend</th>
<th>Sanitation Coverage * [%]</th>
<th>Trend</th>
<th>Hours of supply</th>
<th>Trend</th>
<th>Staff per 1,000 connections</th>
<th>Trend</th>
<th>Collection efficiency [%]</th>
<th>Trend</th>
<th>O+M Cost coverage [%]***</th>
<th>Trend</th>
<th>O+M Cost coverage collection [%]</th>
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<tr>
<td>AHC-MMS</td>
<td>43</td>
<td>↑</td>
<td>96</td>
<td>→</td>
<td>74</td>
<td>↓</td>
<td>17,4</td>
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<td>7</td>
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<td>73</td>
<td>↑</td>
<td>55</td>
<td>↑</td>
</tr>
<tr>
<td>Lusaka</td>
<td>58</td>
<td>→</td>
<td>70</td>
<td>↑</td>
<td>33</td>
<td>→</td>
<td>15,0</td>
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<td>15</td>
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<td>↑</td>
<td>114</td>
<td>↓</td>
<td>76</td>
<td>↑</td>
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<tr>
<td>Nkana</td>
<td>50</td>
<td>↑</td>
<td>92</td>
<td>↑</td>
<td>54</td>
<td>↑</td>
<td>16,5</td>
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<td>11</td>
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<td>↑</td>
<td>106</td>
<td>↑</td>
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<tr>
<td>Kafubu</td>
<td>59</td>
<td>↑</td>
<td>84</td>
<td>↑</td>
<td>50</td>
<td>↓</td>
<td>15,3</td>
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<td>↑</td>
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<td>↓</td>
<td>141</td>
<td>↓</td>
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<tr>
<td>Mulonga</td>
<td>52</td>
<td>↑</td>
<td>91</td>
<td>↑</td>
<td>8</td>
<td>↓</td>
<td>16,0</td>
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<td>50</td>
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<tr>
<td>Western</td>
<td>61</td>
<td>→</td>
<td>30</td>
<td>→</td>
<td>1</td>
<td>↑</td>
<td>19,3</td>
<td>→</td>
<td>16</td>
<td>↑</td>
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<td>110</td>
<td>↑</td>
<td>81</td>
<td>↑</td>
</tr>
<tr>
<td>North-Western</td>
<td>49</td>
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<td>31</td>
<td>↓</td>
<td>2</td>
<td>↑</td>
<td>12,0</td>
<td>↑</td>
<td>14</td>
<td>↑</td>
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<td>↑</td>
<td>46</td>
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<td>Chipata</td>
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<td>↓</td>
<td>71</td>
<td>→</td>
<td>12</td>
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<td>↑</td>
<td>12</td>
<td>↑</td>
<td>47</td>
<td>↓</td>
<td>112</td>
<td>↑</td>
<td>53</td>
<td>↓</td>
</tr>
<tr>
<td>Average</td>
<td>52.2(w)</td>
<td>↑</td>
<td>73 (w)</td>
<td>↑</td>
<td>32 (w)</td>
<td>↑</td>
<td>16,4 (e)</td>
<td>↑</td>
<td>**</td>
<td>↑</td>
<td>58 (w)</td>
<td>↑</td>
<td>104 (w)</td>
<td>→</td>
<td>60 (w)</td>
<td>↑</td>
</tr>
</tbody>
</table>

- **Worse than the relevant average and benchmark not achieved**
- **Better than the relevant average but benchmark not achieved**
- **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
*** different to last years figures as other revenues (e.g. grants) are no longer taken into account

▲ positive trend
v same as last year
▼ negative trend
1.2 Comments and Recommendations for each CU

**AHC-MMS**
- Slight improvement in service hours. Nevertheless, erratic supply remains in Lwalaba township.
- Improvement of Unaccounted for Water (UFW), moving to the second best position among the CUs. Nevertheless, must increase the metering ratio.
- Highest coverage of water supply service coverage.
- Unjustified increases in cost of personnel with high expenditure for outsourced labour.
- Information on costs insufficient.
- The water quality remains a concern in Chingola, Mufulira, Kalulushi and part of Kitwe.
- Customer and public relations need to be improved.

**Chipata WSC**
- Only CU with 24 hours supply and sufficient pressure in the network.
- The indicator for UFW is still the best of all CUs although the trend is negative.
- The CU has declined on a number of their performance indicators.
- Unacceptable expenditure increase for personnel, will have to review the condition of service and move towards a salary package by eliminating fringe benefits.
- Over staffed, will have to review number of personnel.
- Noticeable decrease in collection efficiency, need for better management of collection and disconnections.

**Kafubu WSC**
- Highest UFW, need to introduce metering and billing according to consumption.
- Overall hours of supply insufficient.
- Poor water quality in certain areas, need to increase number of tests on water quality in the relevant areas and review dosing procedures.
- High average staff costs and steep increase in expenditure for staff. Need to review the number of staff and conditions of service.
- Lowest collection efficiency of all the CUs leading to lowest O+M cost coverage according to collection although tariffs would allow 149% O+M cost coverage. Need to urgently increase efforts on collection.
- Inconsistent data on financial and commercial parameters, most probably due to poor accounting procedures.
- Need to improve customer and public relations.

**Lusaka WSC**
- Second highest ratio of UFW, although, commercialised for over 12 years and has the highest potential of customer base in the country. Need to increase metering and billing according to consumption.
- Involvement in peri-urban WSS inadequate. Need to improve at least the supervision of NGO and community operated schemes within their service area.
- Information on peri-urban areas is insufficient and data on financial and commercial parameters are inconsistent. Need to improve accounting and management information system.
- In respect to the size of the company and conditions of operation (one town only) lowest staff efficiency of all CUs. Need to review number of staff urgently.
- Very large and unjustified increase of expenditure for personnel. Need to curb staff costs.
- Lowest hour of supply among the bigger providers. Need to implement an effective pumping programme.
Mulonga WSC
- Third highest UFW among the CUs. Need to increase metering and billing according to consumption.
- Second lowest collection efficiency among all the CUs. Need to improve disconnection efforts and collection efficiency.
- Low collection efficiency leads to a low O+M cost coverage according to collection although tariffs would allow 128% O+M cost coverage.
- Poor customer relations. Need to put in place an improved system to follow up customer complaints.
- Poor commercial information. Need to strengthen management information system.
- Second highest coverage for water supply of all the CUs although deteriorating systems in peri-urban, low cost areas. Need to introduce Kiosk systems.
- Have high staff turnover and key senior positions not filled. Need to elaborate and implement a personnel policy and strategy.
- Insufficient efforts to improve customer care, not responsive to consumer complaints.

Southern WSC
- Further improvement on reducing water losses needed.
- Could improve staff efficiency, negative trend during the reporting period. Need to control number of staff.
- Very low collection efficiency with negative trend, particularly in Livingstone. Need to improve disconnection and collection management.
- Low average of service hours. Need to implement effective pumping programmes.
- Low coverage on water supply.
- Increase in metering, although need to resolve problems associated with customer sensitisation during introduction of metering programme.

Western WSC
- Poor coverage of water supply and sanitation.
- Acceptable hours of supply.
- Positive trend in collection and O+M cost coverage.
- Very low collection per staff member. Need to improve staff efficiency.
- High number of personnel compared to CUs with same size and operation conditions. Need to review number of staff.
- Very poor information system particularly for financial data. Need to improve accounting and introduce annual financial audits.
- Poor information on customer complaints. Need to establish and analyse relevant statistics.

Nkana WSC
- High coverage on water and sanitation.
- Overall positive trend on most of the indicators.
- High water losses. Need to increase metering ratio and billing according to consumption.
- Insufficient collection efficiency. Need to improve disconnection management and collection.
- Low staff efficiency. Need to review number of employees.
- Unacceptable increase in expenditures for personnel.
- Good customer and public relations.

Northwestern WSC
- Highest collection rate of all CUs.
- Low coverage of O+M cost.
- Low coverage of water and sanitation.
- Good potential to improve water losses with the planned programme of metering.
- Large increase in expenditure for personnel. Need to review salary scheme.
1.3 Customer Care

Response to customer complaints is an important indicator of the utilities’ performance. The number of complaints against a utility does not necessarily mean good or bad performance. As customers increasingly become aware of their rights, the number of complaints is likely to rise. Since the existence of NWASCO, response to customer complaints has increased considerably, particularly in Lusaka where a water watch group has been operational. Water watch groups are substructures of NWASCO comprising of volunteers supported by the regulator who follow up unresolved consumer complaints forwarded to the utilities. If these cases are not resolved satisfactorily, they are referred to the management of NWASCO. The water watch groups also carry out sensitisation of consumers on the roles and responsibilities.

The Chart below shows the complaints per 100 connections for each CU.

![Chart showing complaints per 100 connections]

Note: Western WSC did not submit any information on customer complaints.

During the reporting period, the CUs reported receiving a total 27,358 complaints from customers, this represented a 33% increase from 2001/2. Unfortunately, no data was available on the number of complaints that were resolved satisfactorily.

Customers forward unresolved complaints to NWASCO and the water watch group. The 19 complaints forwarded to NWASCO management were resolved where the water utilities were in a position to act on short and medium terms. This also applies for the 21 complaints forwarded to the water watch group in Lusaka.
2. Status of Implementation of the Sector Policy

2.1 Background

The Government of the Republic of Zambia’s sector policy goal is “to promote a sustainable water resources development with a view to facilitate an equitable provision of adequate quantity and quality of water for all competing groups of users at acceptable costs and ensuring security of supply under varying conditions”.

The sector policy entails the separation of functions, devolutions of WSS service responsibilities to local level with the involvement of consumers, improvement of service delivery, increased Government spending, use of appropriate technology, cost recovery in the long run and universal coverage.

In order to achieve this, the GRZ set out seven sector principles as a guide and established NWASCO to implement the policy. Another permanent institution that was established was the Department of Infrastructure and Support Services (DISS) under the Ministry of Local Government and Housing (MLGH) to mobilise funds for investment and elaborate the water supply and sanitation policy. Service provision has been devolved to the local authorities, which are to set up CUs and could engage the private sector in order to increase efficiency and separate policy making functions from service provision. Additional guiding documents are the PRSP and the UN Millennium Development Goals (MDGs) declaration, which form part of the Government strategy.

The separation of functions among different institutions enabling them to focus better and increase transparency, as well as, the involvement of more stakeholders has brought many opportunities but made the system more complex. Consequently, strong cooperation among the actors is required. The water sector has suffered serious lack of coordination so far but efforts to improve the situation are being made.

A number of donors support the sector reform and the implementation of the sector policy such as the German Government through KfW, GTZ, DED and CIM, the Japanese Government through Jica, AfDB, WB, the Irish Government through DCI, the Norwegian Government through Norad, British Government through Care, Unicef etc. Other donors, such as Danida, have expressed their interest to support the sector.

2.2 Improvement of Service Delivery

The commercialisation of WSS services, one of the pillars of the sector policy, is still ongoing with 4 provinces yet to be completed. During the reporting period eleven towns in Northern Province have gone into joint venture and established Chambeshi WSC. The town of Mbala has not joined although the viability assessment report indicated that no single town in the province could alone, viably run water services without exploiting consumers. The institutional and feasibility study of Central Province has been concluded and plans to begin the process of establishing a CU covering all towns is under way.

Due to clustering of towns, a much higher level of economy of scale has been achieved having a positive impact on cost recovery. The 10 existing CUs cover 90% of the urban population. Security of supply has increased in many areas and the water quality today is much better than before the reform as chemicals for water treatment and testing are stocked by the CUs. All the CUs have introduced adequate billing and accounting systems. Customer databases are now regularly updated. In comparison to the situation before the reform, customer relation has significantly improved with complaint desks being set up and procedure defined for complaints handling.

Nevertheless, UFW is still high due to inadequate metering of consumption and rehabilitation of infrastructure. There is room for improvement of the collection rate and efficiency in service delivery. Equally, measures against vandalism remain inadequate in many cases.
There is also need for Government to adhere to its commitments in the sector policy and strategy. Government spending to the sector has decreased in real terms. Ministries and other Government institutions continue to abrogate on their commitments to pay for water and sewerage services. Commitment to solve transitional problems such as secondment of personnel, initial working capital, old debts etc. have not been addressed adequately leaving many CUs in a very difficult situation with a negative cash flow.

The situation in WSS systems operated by the Councils is further deteriorating and many concerned stakeholders such as consumers and some local authorities themselves are calling for accelerated efforts in commercialising the services. Today many of the Councils still depend on the intervention from central Government in order to keep WSS systems functioning.

2.3 Private Sector Participation (PSP)

Studies in Lusaka and the Copperbelt have been undertaken to assess the most viable and desirable form of PSP option. In Lusaka the recommended PSP option, unfortunately, does not include the smaller towns of Chongwe, Kafue, Luangwa and Rufunsa as part of the service area.

In the Copperbelt the ongoing management contract with an international operator is coming to an end. A draft report of the studies to maintain the private sector involvement is available and indicates that a lease grown out of a management contract would be the best option. The proposal also includes the merger of the existing 4 CUs under such arrangement. This option needs to be articulated adequately so that the concerns of stakeholders are taken care of, as initially all the local authorities on the Copperbelt were against this proposal. Their preference was to maintain the current joint ventures of the three CUs and to have them take over AHC-MMS, respective units.

There are also fears that under PSP the providers might not be willing to pay adequate attention to the urban poor and that they will not be forced to do so. If service provision in the peri-urban areas is delegated to NGOs or left with the local authorities, the poor would even be worse off as experience in Zambia has shown.

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2.4 Cost Recovery

There has been progress in the coverage of O+M costs in the CUs.

There are very little and diminishing subsidies from central Government including limited contributions for chemicals from DISS. Some donor support covers temporarily operation cost, which has helped to reduce the negative cash flow of some CUs.

NWASCO’s control to ensure that tariff adjustment applications are justified and increasingly linked to performances of providers such as collection rates leading to enhanced efforts by the provider to reach a higher cost recovery. This and reduced subsidies has resulted in the sector being increasingly financed by customers.

However, achievement of total cost recovery is still a long way away.

2.5 Service Provision to the Peri-urban Areas

The Government strategy to improve service provision to the peri-urban areas was the establishment of the Devolution Trust Fund (DTF), which was provided for in the WSS Act, 1997. The DTF is now operational. Pilot projects for water supply systems for the poor on the Copperbelt have been commissioned and a base line study to capture the situation and identify investment needs in the peri-urban areas
proposed. Plans are under way to find the most suitable organisational set-up for the DTF in order to separate regulation from executive functions of service provision.

Efforts are undertaken to promote sustainable and appropriate systems for the peri-urban areas by the implementation of the guidelines on service provision to the poor. These efforts on national level should help to harmonise the different systems used and to eliminate the unsustainable community operated systems in future. The water sector needs a pragmatic approach, which is workable.

Tariff adjustments are used as an instrument to offer the poor affordable prices that takes into account cross subsidisation at defined consumption (lifeline consumption). Metering of consumption and tariff structures are key elements in providing access to the poor.

The issued guidelines to the service providers include minimum service levels to the peri-urban areas, which are to be serviced with appropriate technology (kiosks etc). The management of service delivery to the peri-urban areas is increasingly being aligned to the requirements of the guidelines with respect to opening hours, controlled tariffs etc.

As 65% of the urban population live in peri-urban areas and most of them under deplorable conditions, NWASCO since its inception has strongly emphasised service provision to the poor. With PRSP there is need to integrate these efforts into an overall concept (PRSP). Nevertheless, the coordinating institutions have not sufficiently involved all the relevant stockholders (such as NWASCO) to put together their efforts in serving the urban poor.

The MDGs for water supply in the urban areas can be achieved if the efforts by NWASCO/DTF and DISS are supported and better coordinated. It is also crucial to harmonise the strategies, between the two key actors, for peri-urban areas and the linkage of the systems for the conventional and peri-urban areas. This will also help in streamlining the support from the different development agencies.

Efforts for improving sanitation in the peri-urban areas have been negligible and this poses a serious obstacle in achieving the goal set during the Johannesburg World Summit on Sustainable Development in 2002. Greater effort and innovation are required in sanitation to make any tangible improvements towards the set Johannesburg target.

2.6 Involvement of Consumers

Effective monitoring of the providers requires the involvement of the consumers from the service area. For this reason NWASCO is planning to extend its substructure of WWG to other parts of the country.

The implementation of the water policy has an implication on the behaviour of the consumers. The tying of billing to consumption and increased surveillance from the providers through regular billing and disconnection makes consumers realise the need to curb wastage. The consumers on the other hand have been given service guarantees and are increasingly becoming aware of their rights. This has led to an increase in complaints because consumers are confident that this will lead to an improvement in service level.

For instance, the Water Watch Group (WWG) in Lusaka, a NWASCO sub-structure at the local level, has succeeded in making LWSC set up a customer services desk which is headed by a senior manager. Additionally, other customer centres have been put in place in localities by LWSC as a result of the efforts of the WWG. With these new centres the provider is closer to the customer and the consumers are no longer obliged to go to the Head Office, which is a long distance from residence of most customers.

The efforts of NWASCO are making providers more customer focused and helping to inform and educate customers on their rights.
3. Service Provision to the poor

3.1 Introduction

The information available on WSS for the peri-urban areas is largely insufficient to give a correct picture of service provision to the poor. In all towns in Zambia there are non-served areas where information on the situation of WSS is more or less not available. In other areas the information is not accurate enough to give a precise picture. Even where information is collected it is not yet integrated into a sector wide information system. This is especially true for small-scale independent systems where service hours and water quality, as well as, tariffs are often not monitored.

For the poor it is difficult to maintain individual/house connections even if the cost of the connection itself is free of charge or subsidised. As the ability to pay is one of the main criteria for a sustainable system, an appropriate service level different from the house connections has to be offered to the poor. Public outlets can offer much cheaper tariffs through economies of scale if they are connected to a main distribution system. On the contrary, independent small-scale systems with their own water source and treatment facilities cannot benefit from economies of scale and therefore need higher tariffs to be sustainable. Additionally, cross subsidising between the rich and the poor is almost impossible for independent systems, leading therefore, to higher tariffs. Whenever economically possible public outlet systems should be connected to the main system.

Community involvement in WSS is very important but must not necessarily mean community management of systems as the case is in rural areas. The population in peri-urban areas is not very homogeneous and lacks social cohesion as compared to rural areas. Additionally, there is a higher turnover of residents in peri-urban areas than in rural areas because of lack of ownership of property as many depend on rented houses. Consequently it is difficult to motivate them to invest in WSS for a long period. Many examples that have emerged during the last decades in Zambia (such as Kamanga in Lusaka, Ipusukilo and Racecourse in Kitwe, Kapisha in Chingola) have documented these weaknesses. Unfortunately, many decision makers and agencies keep on ignoring these facts thus wasting efforts, time and resources.

3.2 Description of Existing Systems and Challenges

In Zambia there are many different types of systems for water supply in the peri-urban areas. For instance, in Lusaka there are systems linked to the main network and operated by LWSC, the licensed service provider for Lusaka. Others are entirely community managed and not yet monitored by the licensed provider and NWASCO. On the other hand there are physically independent systems, managed by LWSC (like in George Complex) or NGOs.

None of these systems can be said to be sustainable in the long term. For instance, George Complex serving a population of approximately 120,000 was originally planned to be community managed. As it became clear that operation and maintenance would not be sustainable under the community, LWSC had to be engaged to provide a manager and take over certain functions, such as financial management, carrying out major maintenance work and monitoring water quality. For these services LWSC receives very little or almost nothing in return. The Kamanga water scheme is another example of a system handed over to the community to manage and after failure (break down of boreholes) LWSC was approached to take over operations. The public outlet system in Malota in Livingstone faces similar problems linked to its operation.

It is not difficult to imagine what will happen if commercial principles are more strictly applied or private operators are engaged to take over from LWSC. The poor would be left alone again with the system to manage, a situation which already has proven not to be sustainable because the systems designed (infrastructure and operation) are too complex and community management is not professional. George Compound and Kamanga are examples of how a system only focused on community management will stay unattractive for professional providers. The newly introduced Water Trusts in Chipata and Kanyama compounds in Lusaka still maintain community management but that does not fundamentally change the situation. Once a system for the poor is designed for community management and operation is started, it is very difficult at a later stage to seek involvement of professional providers when problems arise.
Even in cases where the supply system for the poor is linked to the main network and operated by the licensed WSS provider through private vendors linked with a contract, the services are not adequate and the provider does not see or realise the full benefits. For instance in Mwaiserani Compound in Ndola the community chosen vendors at the public outlets are linked with a contract to the provider but not adequately trained and supervised. And like in many of the towns, public outlets are not metered, which makes it impossible for the provider to account for the sales and leads to wastage because the users have no incentive to close or repair the tap when broken. The result is as already described.

It should not be forgotten that numerous examples have shown that as soon as development agencies like NGOs, etc, cease their support for water supply and sanitation service provision or professional providers like CUs withdraw, the sustainability of these systems is threatened. Additionally, the small-scale systems cannot generate sufficient funds to make extensions to unserved areas.

### Kiosk Systems

There are some very positive examples of service provision to the poor in Zambia. For instance, the Kiosk system in the town of Chipata has proven to be sustainable for more than 10 years. The professional provider yields a high collection rate (98% for Chipata) the water sold is metered and therefore water losses are kept at a minimum of less than 5%, while the water quality is the same as for connected households; and last but not least, the social tariffs offered are rigorously controlled. Also new Kiosk systems operated by SWSC in Monze took off recently quite successfully. For these cases the service providers and the poor meet their interests.

What makes Kiosk systems so successful?

- The providers engage the community in the phase of the establishment of the Kiosks but remain responsible for the operation.
- The management of the system is simple, transparent and not complex. The professional providers engage private vendors for the operation of the Kiosk, establish a contract with them, train them and monitor their service level continuously.
- Billing of vendors is done according to metering and collection is carried out in short sequences. Penalties or layoffs for defaulting vendors are done rigorously.
- Water wastage is curbed because Kiosks are metered (also eliminates ‘free riders’) and water is sold to clients per standard volume containers. This helps providers to reduce UFW.
- Kiosks under professional operators (like CUs) linked to the main network can offer low / social tariffs and still meet O+M costs and thereby provide an affordable service to the poor.
- Kiosks are an interesting source of income for the private vendors if their number is limited within an area (to about 1,500 inhabitants/kiosk) and a provision to sell other goods is made.
- Vandalism of the facility is minimized as the Kiosk is manned and constructed to be vandal proof.
3.3 Aiming to Improve Service Provision to the Urban Poor Nation Wide

As focus for service provision to the poor is increasing with the help of PRSP and its integration in national policy, some acceleration of progress can be anticipated. Presently a baseline study on service provision for the peri-urban areas, to be carried out by the Devolution Trust Fund (DTF), is in preparation. The information to be generated will enable NWASCO to give a more precise account on the status of service provision to the urban poor in the sector report 2003/2004. Another expected outcome of the baseline study is the identification of investment needs and of criteria for prioritisation.

Additionally, pilot Kiosk projects to be carried out in the Copperbelt with Nkana and MulongaWSCs are in preparation in order to duplicate the successful experiences of SWSC and Chipata WSC as well as to build capacity for such activities at the DTF and the CUs (help for self-help).

NWASCO developed guidelines for water supply systems and its operation in order to improve the delivery to the peri-urban areas and thereby living conditions for the poor. Sanitation on the other hand has not been given much attention and continues to lag behind water supply. Much more needs to be done to improve on-site sanitation as this is also a factor in outbreaks of diarrhoea / waterborne diseases.
4. About NWASCO

4.1 General

The National Water Supply and Sanitation Council (NWASCO), the autonomous water regulator has been operational for over three years. Over this period NWASCO has become fully operational and licensed 46 water supply and sanitation providers.

NWASCO suffered a setback for eleven months when the mandate of the first council ended in September 2002, and the new council could not be appointed due to bureaucratic reasons. This adversely affected its' operations and that of service providers particularly those that had applied for tariff adjustment in September/October 2002 as the same could not be considered in the absence of the Council. There were therefore no tariff adjustments approved during the period.

4.2 Financing of NWASCO

NWASCO has been developing its financial autonomy from license fees from the providers which is at 1% of the turnover. With these resources at 75% collection rate, NWASCO was able to meet 70% of its budget for 2002 through licence fee collections as opposed to 43% in 2001. The difference was covered by grants appropriated by Parliament through the Ministry of Energy and Water Development and support by the German Government through technical assistance from GTZ. Grant releases from the Government declined and are expected to end in a few years time.

4.3 Progress of NWASCO

4.3.1 Licensing

The one year provisional licences issued to all service providers in 2001 to facilitate the collection of information for the 10-year licence lapsed. During the year, eighteen (18) providers were issued with the 10-year licences. The eighteen are composed of all the nine commercial utilities, 5 out of 7 private companies running water schemes but only 4 out of 33 local authorities in Central Province.

4.3.2 Implementation of Regulation Tools

Nine guidelines had been developed in 2001/2002. In order to raise service providers’ understanding of these guidelines, to improve the general quality of submitted documents as well as to get feedback on the same, sensitisation/training workshops were conducted for all CUs on the following five guidelines:

- Minimum Service Levels
- Corporate Governance
- Business plan
- Reporting
- Tariff Adjustment

The consultative and sensitisation workshops for the remaining guidelines will be conducted in the coming year.

4.3.3 Advice to Govt and Local Authorities

In its continued efforts to sector development, NWASCO has been supporting the Ministry of Local Government and Housing (MLGH) in the commercialisation process of the Central and Northern Provinces. The Chambeshi Water and Sewerage Company in the Northern Province has since been established with the financial support from Development Cooperation Ireland.

Further support to MLGH and Local Authorities has been through participation in the relevant committees overseeing studies on private sector participation on the Copperbelt and Lusaka provinces.

4.3.4 Support to CUs

Out of the 9 CUs, 3 namely AHC-MMS, Southern and North-Western WSC have substantial external support. NWASCO has been providing intermittent but targeted support to raise management skills among the CUs. A number of initiatives are being coordinated through NWASCO among these are: The German funded Performance Oriented Incentive Scheme (POIS) for CUs which is being implemented in four utilities (Kafubu, Nkana, Southern and North Western Water and Sewerage Companies). The scheme aims to introduce human resource management tools and reduces production costs in the long run by improving the efficiency of their personnel.

Further support was mobilised for training of trainers for all the CU’s. Four training sessions were conducted for supervisors and middle management personnel to help them develop in-house training skills, particularly on the job training of subordinates.
NWASCO Participation and Exchange at Local, Regional and International Levels

NWASCO staff participated in a number of international meetings and conferences:
- World Summit on sustainable development held in Johannesburg, South Africa.
- African Ministers Conference on Water, which was a parallel event at the Summit.
- World Water Forum in Kyoto, Japan.
- Annual Consulting partner’s meeting of the global Water partnership (GWP), Ghana.
- Water Demand Management workshop in South Africa.
- Southern Africa Region alliance for Resource Centre and Institute of Water and Sanitation Development in Harare Zimbabwe.
- PSP and the Poor, Workshop by WUP/ WEDC in Maputo, Mozambique.

NWASCO continued its supportive role to the SADC Water Division where it has been appointed as implementing Agency for water supply projects of the SADC Regional Investment Support Programme.

At local level, NWASCO participated in various sector meetings and conferences. A stakeholders’ discussion was organised to discuss the collaboration and developments in the sector and seek the support of the decision makers. NWASCO also hosted the water sector coordination meetings of the key players in the sector.

4.4 Capacity Building for NWASCO

NWASCO accessed the Private Public Infrastructure Advisory Facility (PPIAF) funding for a study on the assessment of its regulatory institutional capacity. The study was conducted by Applied Technology Institute (ATI) with the view of recommending activities to enhance NWASCO’s capacity.

Targeted capacity building interventions among the staff were carried out: two officers attended a course on ‘Frontiers in Managing Reform and Regulation in the Electricity, Gas, Telecommunications and Water Sectors’ at the Graduate School of Business of the University of Cape Town, South Africa; others participated in the study tours / visits to:

- Water Sector Regulators in countries in Asia, South America and Australia.
- Australia on National and Transboundary water resource management.

NWASCO mediated in the dispute between Southern Water and Sewerage Company and Sun International Hotels Limited in Livingstone regarding the applicable tariff for water supply and sewerage services.

NWASCO has been supporting Lusaka WSC and Copperbelt CUs as well as MLGH during the PSP option study.

4.3.5 Service Monitoring

A number of inspection visits were undertaken at CUs on the Copperbelt Province. Other visits or spot checks were carried out in Chipata, Southern, North Western, Western and Lusaka Water and Sewage Companies and Kafue District Council. The inspection visits were to check on their compliance to licence conditions and guidelines. A number of the providers were found overcharging peri-urban customers and were warned.

NWASCO started developing a comprehensive and computerised information system to assist in the management of the increasing data flow and for consistent and effective monitoring of sector performance.

LWSC reduced the service level in Avondale and Chelston from 18 hours of supply to 6hrs every other day in Sept to December 2002. NWASCO therefore directed LWSC to reduce the water bills of the affected customers by 50% for the same period.

Papers were presented at some of the conferences.
5. Comparative Performance of Providers

5.1 Commercial Utilities Performance Comparison

The objective of this report is to compare the performance of CUs and to document the trend of development in the sub-sector. It is expected that the utilities will set the previous level of performance as a benchmark to be outperformed in the coming years and also that the spirit of competition will result in the endeavour of the utilities’ management to perform even better. It is also intended to raise expectations in water users and other stakeholders because this is a necessary ingredient to improvement in service provision.

CUs which have received external support in the past and those that are currently receiving support in terms of investment have generally performed better. Support has been in form of grants and loans to the Zambian Government. It therefore shows that there is need for investment if the sector is to perform to the expected standards.

5.1.1 Water Production and Clustering of Companies

Based on the production in terms of volumes and size of the population serviced, CUs are classified in four groups as shown in Table 2. Clustering has been initiated in order to objectively compare CUs with similar conditions and potential.

Table 2: Clustering of CUs

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Commercial Utility</th>
<th>Water Production (Million cubic metre)</th>
<th>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>AMC - MMS</td>
<td>72.0</td>
<td>312</td>
<td>393 148</td>
<td>43 491</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Lusaka WSC (LWSC)</td>
<td>76.2</td>
<td>482</td>
<td>1 120 000</td>
<td>34 514</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Nkana WSC (NWSC)</td>
<td>35.2</td>
<td>303</td>
<td>307 405</td>
<td>27 751</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Kaputa WSC (KWSC)</td>
<td>57.9</td>
<td>254</td>
<td>362 000</td>
<td>26 898</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Southern WSC (SWSC)</td>
<td>20.0</td>
<td>249</td>
<td>284 926</td>
<td>18 814</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Mulungu WSC (MWSC)</td>
<td>20.0</td>
<td>165</td>
<td>246 000</td>
<td>20 984</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Western WSC (WWSC)</td>
<td>5.0</td>
<td>91</td>
<td>224 600</td>
<td>5 606</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Northwestern WSC (NWWSC)</td>
<td>5.0</td>
<td>54</td>
<td>126 500</td>
<td>3 959</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Chipata WSC (CWSC)</td>
<td>2.0</td>
<td>56</td>
<td>104 040</td>
<td>4 659</td>
<td>1</td>
</tr>
</tbody>
</table>

In 2002/3, 140 million cubic metres of water was billed in all the CUs together. This represents an increase of about 6% compared to 2001/2.
5.1.2 Household Connections

Taking all the CUs together, there was an increase in the total number of household connections by 3.3% from 181,000 connections in 2001/2 to 187,000 connections in 2002/3. The increase in household connections coincides with the increase in the water service coverage which was at about 3%.

5.1.3 Unaccounted for Water (UFW) and Metering Ratio

UFW is an indicator for the water lost in the system, this is non-revenue water. The data on UFW collected from CUs represent estimates only, since the majority of CUs besides Chipata WSC do not have 100% metering. Using the benchmark for UFW below, Chart 2 shows that all the CUs are below the acceptable range. The chart however shows an improvement on the average UFW from 56% in the year 2001/2 to 52% in the year 2002/3.
In order to bring UFW to an acceptable level the CUs need to achieve 100% metering of customers, install a sufficient number of bulk meters to curb physical losses, update regularly the customer database in order to avoid illegal connections and ensure correct and timely billing. It is also crucial to curb corruption linked to meter reading, billing and disconnection. Without lowering UFW it will be difficult to cover costs.

Chart 3 shows a slight improvement of 2% in the average metering ratio. This is the weighted average as opposed to the simple average that was used in 2001/2 year’s report.

5.1.4 Total Population and Water Service Coverage

The bulk of the population served by CUs live in Lusaka City and in the Copperbelt towns, covering together 77% of the total served by CUs.

5.1.5 Water Service Coverage

Chart 5 shows that during the reporting period not much improvement has been achieved by the CUs to extend their services to new or to inadequately served areas. The water coverage ratio increased slightly by 3%.

It should be noted that the 2001/2 report indicated an average water coverage ratio of 60% because a simple average was used as opposed to the weighted average that has been used in this report. All the Copperbelt towns and Chipata have reached an acceptable coverage ratio when compared with the benchmark below. The rest of the CUs are below the benchmark.
North Western reported a decline in water service coverage ratio. This can be attributed mainly to data base clean up which eliminated double counting and some institutions that have installed their own supply.

The 2001/2002 reported service coverage of Lusaka has been adjusted to 68% in order to include the population in peri-urban areas serviced by Community Based Organisations (CBO), often supported by NGOs, since Lusaka holds the operating licence for these areas.

North Western reported a decline in water service coverage ratio. This can be attributed mainly to data base clean up which eliminated double counting and some institutions that have installed their own supply.

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.

<table>
<thead>
<tr>
<th>Benchmark for service coverage in low density town areas</th>
<th>Good</th>
<th>&gt;80%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptable</td>
<td>70-80%</td>
<td></td>
</tr>
<tr>
<td>Unacceptable</td>
<td>&lt;70%</td>
<td></td>
</tr>
</tbody>
</table>

5.1.6 Sanitation Coverage

During the period 2001/2 to 2002/3 little improvement in the sanitation coverage was achieved. Some companies improved the coverage slightly but this was counterbalanced by a deteriorated coverage in other companies, as can be seen from Chart 6.
5.1.7 Hours of Supply

One major service level factor, which is of paramount importance to the customers, is the hours of supply. Apart from billing this is one area where there are most customer complaints. Chart 7 shows hours of supply for the two previous financial years.

During the reporting period, hours of supply by the 9 CUs varied between 2 hours to 24 hours per day. But the average hours of supply was less varied, between 12 to 24 hours. With Southern, Kafubu and Lusaka reporting significant improvements in the average hours of supply. The reported lowest supply of 12 hours per day compared to the 2001/2 of 8 hours, indicates a tremendous improvement of about 50%.

Nevertheless the reported variations between the areas with the lowest hours of supply to those with the highest, reported by Lusaka, Kafubu, Southern and North Western was too wide. Only Chipata had 24 hours of supply per day for all household connections.

5.1.8 Collection Efficiency

Chart 8 shows the billing and collection efficiency for 2001/2 and 2002/3. A slight improvement was achieved by the companies in terms of average collection which now stands at 58% compared to last years 54%. Six CUs reported an improved collection efficiency. Nevertheless collection levels are still unacceptably low compared to the benchmark of 85% as acceptable. Chipata WSC reported a notable decrease in collection efficiency from 99% to 47%. This is be attributed to poor payment by government departments in the year 2002/3 compared to 2001/2. In 2002/3 only NWWSC had achieved a remarkable collection efficiency of 108%, due mainly to collection of outstanding debt from the previous years. (This shows the present weakness in the calculation of this indicator. It is expected that the collection efficiency be calculated on the collection of a specific period. Unfortunately, the CUs do not yet distinguish between the collection period concerned and previous collection periods. Consequently, only a medium term average like 3 years for instance will give a true picture of the collection efficiency).

In order to get a fair view, Chart 9 shows an average collection efficiency calculated over two years. North Western, Western, Chipata, AHC-MMS and Lusaka reported collection above the average of 56%. While the rest are below the average collection efficiency. Nevertheless, only North Western reported an acceptable collection efficiency compared to the benchmark of 85%.
Government institutions account for a third of billing in all the CUs, except for AHC-MMS. These account for about half of the long outstanding debt. This situation shows a lack of Government departments’ commitment to pay for water and sanitation services.

### Benchmark for collection efficiency

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

5.1.9 Staff Efficiency

The main indicator used to measure staff efficiency is the number of “staff per 1,000 connections”. The lower the number of staff per 1,000 connections, the higher the staff efficiency of the company.

Two more indicators are compared to analyse staff efficiency: billing per staff (see Chart 10) and collection per staff (see Table 3 on page 24).

While “billing per staff” can give additional information on the appropriateness of the staffing level, the indicator “collection per staff” contains an additional performance element. North WesternWSC for example is second lowest in billing per staff due to a small customer base but only fourth lowest in collection per staff because of a very high collection efficiency.
Although Chipata and Kafubu, due to tariff increases, reported a significant improvement in the billing per staff, efficiency of staff did not improve significantly. This indicates a net deterioration of staff efficiency during the reporting period. The net staff efficiencies will be a major factor in future consideration of further tariff increases besides other justified cost increases.

| Benchmark for staff per 1000 connections large companies (Cluster 1 and 2) | Good | <5 |
| Benchmark for staff per 1000 connections medium & small companies with up to 3 towns (Cluster 3 and 4) | Good | <7 |
| Acceptable | 7-11 |
| Unacceptable | >11 |

The staff efficiency of AHC-MMS at 7 is distorted by the fact that a high level of expenditure goes to casual labour or is outsourced. The information provided by AHC-MMS does not allow data adjustment to the chart.

5.1.10 Average Personnel Cost per Staff

Chart 11 shows the average cost per employee on a monthly basis. Generally, all CUs reported very high increases in personnel cost in 2002/2003 averaging 66%. In this chart it can be seen that the earlier commercialised companies Lusaka WSC and Chipata WSC, as well as the company with an international operator AHC-MMS show the highest average staff cost.

Although Chipata and Kafubu, due to tariff increases, reported a significant improvement in the billing per staff, efficiency of staff did not improve significantly. This indicates a net deterioration of staff efficiency during the reporting period. The net staff efficiencies will be a major factor in future consideration of further tariff increases besides other justified cost increases.

The drastic increase of personnel costs in all the CUs is cause for serious concern. The average personnel cost per staff per month was below 1 Million ZMK in 2001/2 it rose to about 1.5 Million ZMK in 2002/3.
Expenditure for personnel of the different CUs are difficult to compare as some of the CUs offer a salary package including all fringe benefits (all-inclusive salary) whereas others separate salary and fringe benefits. Separating payments in such a way has a disadvantage because projections and control of expenditures for fringe benefits is quite difficult. Consequently, all CUs should move to an all-inclusive salary system. Although some of the increases are due to gratuity payment after 3 years of service, it does not explain the overall huge increase in personnel expenditure.
Recommendations on Staff Efficiency

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Salaries should have a component that is paid upon performance</th>
<th>Staffing level should be reconsidered</th>
<th>Salary structures should be reviewed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries should have a component that is paid upon performance</td>
<td>MWSC, LWSC, AHC-MMS, CWSC, WWSC</td>
<td>LWSC, CWSC &amp; WWSC</td>
<td>All CUs</td>
</tr>
</tbody>
</table>

Medium range

5.1.1 Water Production Cost

In the water industry the aim is to produce potable water at reasonable cost. Output compared to cost is used in measuring the economic performance. Improvements in performance should partly be passed on to the consumer. If costs are not controlled it will lead to unjustified tariff adjustment requests. High unjustified tariffs will eventually lead to resistance by customers to pay their bills and consequently negatively impacting revenues. If costs are unjustified high and tariffs do not cover the inefficiency sustainability of the system is threatened.

Cost of operation

The major costs that are associated with production of water are personnel, energy, chemicals and administrative costs. The challenge water utilities face is to bring down the cost of personnel by maintaining a lean organizational structure with a limited number of personnel and introduction of performance management. Equally pumping costs of water have to be minimised in order to reduce on energy cost.

During the reporting period some of the CUs were supported by MLGH providing chemicals and helping to carry out debt swap with ZESCO. However the bigger portion of the ZESCO bill is not paid for by most CUs. With the commercialisation of ZESCO in the year 2004, the CUs have the challenge to adequately address the ZESCO bill on a monthly basis starting January 2004.

Table 4: Cost of Operation (in million ZMK)

<table>
<thead>
<tr>
<th></th>
<th>Personnel Cost</th>
<th>Chemicals Cost</th>
<th>Energy Cost</th>
<th>Other Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2001/2</td>
<td>2002/3</td>
<td>% increase</td>
<td>2001/2</td>
<td>2002/3</td>
</tr>
<tr>
<td>Western</td>
<td>302</td>
<td>473</td>
<td>57%</td>
<td>32</td>
<td>33</td>
</tr>
<tr>
<td>North Western</td>
<td>618</td>
<td>1100</td>
<td>78%</td>
<td>45</td>
<td>52</td>
</tr>
<tr>
<td>Chipita</td>
<td>774</td>
<td>1534</td>
<td>98%</td>
<td>41</td>
<td>7</td>
</tr>
<tr>
<td>Southern</td>
<td>1651</td>
<td>2525</td>
<td>53%</td>
<td>383</td>
<td>405</td>
</tr>
<tr>
<td>Mulungu</td>
<td>1093</td>
<td>1389</td>
<td>27%</td>
<td>350</td>
<td>397</td>
</tr>
<tr>
<td>Kafue</td>
<td>2841</td>
<td>4662</td>
<td>64%</td>
<td>318</td>
<td>678</td>
</tr>
<tr>
<td>Nkana</td>
<td>1714</td>
<td>3407</td>
<td>99%</td>
<td>1197</td>
<td>1121</td>
</tr>
<tr>
<td>Lusaka</td>
<td>8360</td>
<td>14510</td>
<td>74%</td>
<td>1224</td>
<td>1181</td>
</tr>
<tr>
<td>AHC-MMS</td>
<td>7133</td>
<td>10004</td>
<td>40%</td>
<td>2187</td>
<td>1950</td>
</tr>
</tbody>
</table>

Note: Big changes in expenditure for energy costs are due to debt swaps or unpaid electricity bills.

The companies do not encounter the same environmental and business conditions and therefore their cost structures differ to some extent.
Cost Structure

In the 2001/2 report it became evident that the cost categories are defined differently among the CUs. The chart of accounts cannot be 100% identical because the size of the companies and type of production differ, but on the higher aggregated level the cost categories will in future be more alike than they are today. The harmonisation of accounting to facilitate comparison of expenditure and cost structures is under way with the preparation of the relevant guideline.

5.1.12 Average Tariff and Unit Operation Cost

As can be seen in Chart 13, the average tariff for each CU either increased or remained the same. Increases in the average tariff can be attributed to tariff adjustments which were effected at different times during the 2001/2 reporting period. The two companies with the biggest difference between the average tariff calculated by revenue and the average cost are Northwestern WSC and AHC-MMS which indicates need for upward tariff adjustments. Both companies applied for a tariff increase in 2002. Unfortunately, the increase came into effect only by the end of 2003 because the regulator had no Board approving the tariff proposal during a number of months.

The role of NWASCO in this setting is to allow for cost recovering tariffs but at the same time to protect the customers from undue cost charges and inefficiencies in the services, which means that the tariffs cannot attain full recovery as long as major inefficiencies exist. There would be little incentive to companies to improve their services if the regulator granted full cost recovery tariffs in order to cover their inefficiency. Present poverty levels and purchasing power of customers as well as the behavioural change have to be factored into the tariff structure to avoid drastic increases of tariffs especially for the poor.

**Chart 12: Cost of Operation (Breakdown) 2002/3**

**Chart 13: Unit Operation Cost and Average Tariff**

- Unit Operation Cost 2001/2
- Unit Operation Cost 2002/3
- Average Tariff 2001/2
- Average Tariff 2002/3
5.1.13 Cost Coverage by Billing

One of the water sector principles is to attain full cost recovery. This can however not be achieved over a short period because of the high UFW, low billing and collection and the socio-economic impact substantial tariff increases would have on the average water user. Nevertheless, it is necessary that the water companies attain operation and maintenance cost coverage as soon as possible.

Currently, the total billings of all CUs except North Western WSC and AHC-MMS recover their total O+M cost.

5.1.14 Cost covered by Collection

In contrast to the positive impression of cost recovery by billing, cost recovery by collection gives a very bleak picture. The capacity to cover costs by collection varies between 45% and 81%. In 2002/3 the best company appears to be Western WSC which is not the case because WWSC does not account for all expenditures.

Lusaka WSC (76%) and Southern WSC (68%) reported a comparatively better coverage of O+M costs, whilst Kafubu WSC (45%) has the worst ratio of costs and collection. In between are North Western WSC, Mulonga WSC, Chipata, AHC-MMS and Nkana WSC which are about 50%.

![Chart 14: Cost Coverage (Billing)](chart.png)

Looking at the benchmark all the CUs’ cost coverage is still unacceptable, based on collection. Nevertheless, seven out of nine CUs show slight improvement regarding this indicator over the reporting period.

<table>
<thead>
<tr>
<th>Benchmark for coverage of O+M cost (until 2005)</th>
<th>Good</th>
<th>Acceptable</th>
<th>Unacceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&gt;150%</td>
<td>100-150%</td>
<td>&lt;100%</td>
</tr>
</tbody>
</table>
WWSC – Not all costs included.

5.1.15 Cost Coverage at an acceptable level of collection (85%)

As Chart 16 documents, it is not a low tariff level which leads to insufficient coverage of O+M costs but mainly low collection efficiency, high UFW and unjustified costs. Except for AHC-MMS and NWWSC, all other CUs are able to cover O+M cost if they would reach an acceptable collection efficiency.

Nevertheless, covering O+M cost is only a short term objective and the sector has to move increasingly to cover total costs. This includes capital costs. For this, the existing tariff level is insufficient.

Tariff increments have been tied more to cost recovery of the operational and maintenance costs, as the very low tariffs in the past were not related to the cost. More and more tariff increments in future will be linked to improved performance and efficiency. Unjustified costs will not be entertained.
5.1.16 Compliance to Guidelines and Quality of Information

NWASCO issued a number of performance and operating guidelines, which CUs are obliged to follow strictly in their operations regarding statutory returns.

The submitted documents have been assessed and rated ‘good’, ‘fair’ and ‘poor’, based on the quality of information, feasibility of proposals, compliance to the guidelines and respect for deadlines. Table below shows how each CU performed.

Table 5: Quality of Submitted Documents

<table>
<thead>
<tr>
<th>Utility</th>
<th>Minimum SL annual reports</th>
<th>The Annual Report</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHC-MMS</td>
<td>Good</td>
<td>Fair</td>
<td>Information on cost insufficient.</td>
</tr>
<tr>
<td>Chipata</td>
<td>Good</td>
<td>Fair</td>
<td></td>
</tr>
<tr>
<td>Kafubu</td>
<td>Good</td>
<td>Fair</td>
<td>Inconsistent data on financial and commercial parameters.</td>
</tr>
<tr>
<td>Lusaka</td>
<td>Fair</td>
<td>Fair</td>
<td>Inconsistent data on financial and commercial parameters.</td>
</tr>
<tr>
<td>Mulonga</td>
<td>N/A</td>
<td>Poor</td>
<td>Commercial information poor</td>
</tr>
<tr>
<td>Nkana</td>
<td>Fair</td>
<td>Fair</td>
<td></td>
</tr>
<tr>
<td>North-western</td>
<td>Fair</td>
<td>Fair</td>
<td></td>
</tr>
<tr>
<td>Southern</td>
<td>Fair</td>
<td>Fair</td>
<td>Production and billing data needs improvement.</td>
</tr>
<tr>
<td>Western</td>
<td>N/A</td>
<td>Poor</td>
<td>Financial and customer complaint information of very poor quality.</td>
</tr>
</tbody>
</table>

5.2 Performance of other Water Providers

5.2.1 Performance of Local Authorities

Local authorities, (LAs) have continued to provide water supply and sanitation services in four provinces namely Central, Eastern, Luapula and Lusaka in areas not covered by CUs. The service provision within the local authorities is generally poor due to insufficient professional management, un-skilled labour force and lack of distinction between council and water department revenues and expenditures.

Not much information was received from the Local Authorities, out of the 33 Schemes run by LAs only 7 (Kafue, Serenje, Kapiri, Kabwe, Luangwa, Katete and Chinsali) submitted information. The quality of information received was however very poor in comparision with the CUs. Therefore, other information had to be used in the report, such as feasibility studies, enquiries etc.
Service provision to local authorities’ service areas continue to deteriorate in the Eastern, Luapula and Lusaka provinces towns. The suspension of the License of Kafue D.C. was lifted in August 2002 after the service provision stabilized under the management of Lusaka WSC. Some modest improvements were reported in Central and Northern province towns where some emergency rehabilitation works were undertaken through support of ADB / HIPIC and DCI respectively. However, no detailed data was made available to show actual improvements in terms of the specific service indicators of performance as shown for the CUs. Some marked progress was made in the establishment of the Chambeshi WSC in Northern province.

Central province towns reported better service levels in terms of hours of supply. Ranging from 7 to 20 hours and an average of 12 hours. Kabwe reported improvements to its sanitation network and restoration of supply to Bwacha, Chimanimani and Ngungu townships.

In Eastern Province, Nyimba continues to have no supply and Katete reported very poor service with 2 hours supply per day. Luapula province continues to receive water of poor quality with most of the towns supplying untreated water which is pumped directly from the surface sources into the distribution network without any treatment. A number of boreholes were also established with support from Zamsif, these also included construction of sanitation facilities though data on coverage was not available.

5.2.2 Performance of Private Water Providers

Generally, the private providers which include Chilanga cement plc, Kaleya Small Holding, KCM-Nampundwe Mine, Maamba Collieries, Zambia Sugar Plc and Zesco supply water to their employees. While the level of service in terms of coverage is 100% and hours of service are acceptable, water quality (as results received from Chilanga, Maamba and Kaleya document) is poor with respect to bacteriological parameters. This is a serious concern.