
National Water Services Benchmarking Initiative

Promoting best practice

Benchmarking outcomes for 2004/5

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water & forestry

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Preface

Challenges facing municipalities

The South African water sector faces four key challenges in the short and medium term:

1. to increase affordable access to water supply and sanitation services;
2. to ensure that the services provided are sustainable;
3. to develop the necessary capacity to meet the above two challenges; and
4. to improve performance so as to meet the above challenges in the most effective and efficient way.

The role of benchmarking

Benchmarking can play an important role in helping the sector to assess to what extent water services providers are meeting these challenges and, in particular, to what extent sector performance is improving over time. More significantly, benchmarking can help to identify best practices from which others can learn as well as areas most needing improvement.

A national initiative

The National Benchmarking Initiative is a joint initiative of the South African Local Government Association (SALGA), the Department of Water Affairs and Forestry (DWAF) and the Water Research Council (WRC). The goal is to promote improved performance of water services by all water services providers in South Africa. The initiative undertakes annual benchmarking of key performance indicators for the provision of water services in participating municipalities. This involves site visits and quality control to ensure consistency and reliability. Outcomes are presented at an annual benchmarking conference to highlight achievements and best practices and to direct learning efforts to areas where improvements can be achieved. DWAF has provided initial seed funding for the initiative. Ethekewini Municipality is the implementing agent. Palmer Development Group in association with Africon and EarthTech (Canada) are the service providers.

Ensuring success

The initiative aims to develop a sustainable benchmarking process which benefits participants and caters to their needs. The following principles inform the implementation of the initiative so as to ensure success:

1. **Ownership of the process by senior water managers.** The senior water managers must believe in the usefulness of the benchmarking programme, fully support the process and *be directly involved*.
2. **Peer review.** Peer review of benchmarking outcomes is a powerful mechanism not only to communicate the outcomes but also to ensure active participation in the process.
3. **Moving from knowledge to changes in practice.** If benchmarking does not lead to improvements in performance, then the benefits of the system are questionable. Linking this programme to changes in practice implies significant involvement of senior water managers in the benchmarking process. In addition, learning and change is more likely where water managers interact on a regular basis and share common concerns.
4. **Incremental and selective rather than comprehensive.** Ambitious benchmarking schemes have floundered due to a poor benefit-to-effort relationship. For this reason, the programme will focus on a few well-selected indicators.
5. **Clear definitions.** Adequate attention will be given to ensure clear, precise and consistently interpreted definitions.
6. **Assessment of reliability.** The source of data and its reliability must be well understood when measuring performance.
7. **Quality assurance and audits.** The process of collecting, entering and checking data needs to be based on sound quality assurance practices.

8. **Software.** The software used needs to be both flexible and user friendly.
9. **Sustainability.** Payment for the benchmarking service by the beneficiaries of the service is a clear indication of the value derived and of commitment to the process. The sustainability of the benchmarking system will only be guaranteed if the initiative is funded by the water services authorities themselves in due course.
10. **Professional expertise and experience.** A sound benchmarking system is dependent on sound professional expertise on the part of the service provider undertaking the data collection and data analysis.
11. **Responsive to user needs.** The process needs to respond to and meet the needs of the water services managers.

Acronyms

DPLG	Department of Provincial and Local Government
DWAF	Department of Water Affairs and Forestry
DWQF	Drinking Water Quality Framework
KPI	Key Performance Indicator
MFMA	Municipal Finance Management Act
MIG	Municipal Infrastructure Grant
PFMA	Public Finance Management Act
SAAWU	South African Association of Water Utilities
SABS	South African Bureau of Standards
SALGA	South African Local Government Association
SANS	South African National Standards
WSDP	Water Services Development Plan

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1 Introduction

1.1 Benchmarking in context

The Strategic Framework for Water Services (2003) set out the vision for the water services sector. It is this vision – the goal of effective, efficient and sustainable provision of water services – that benchmarking seeks to promote:

Sector vision: Water is life, sanitation is dignity

All people living in South Africa have access to adequate, safe, appropriate and affordable water and sanitation services, use water wisely and practise safe sanitation.

Water supply and sanitation services are provided by effective, efficient and sustainable institutions that are accountable and responsive to those whom they serve. Water services institutions reflect the cultural, gender and racial diversity in South Africa.

Water is used effectively, efficiently and sustainably in order to reduce poverty, improve human health and promote economic development. Water and wastewater are managed in an environmentally responsible and sustainable manner.

Strategic Framework for Water Services, 2003

Benchmarking also supports a key element of the National Water Services Regulation Strategy, namely to understand sector performance.

The approach used in the benchmarking process is directly informed by the principles for understanding performance set out in the draft National Water Services Regulation Strategy.

Key elements of this approach are summarised here:

- A system that enables credible information to be published, based on actual performance by water services institutions, will create incentives to improve performance.
- The system is based on self-reporting by water services authorities themselves.
- The system focuses initially only on high-level outcome-related performance indicators.
- The implementation of reporting is incremental, recognising the limited capacity within many water services authorities.
- Financial ring-fencing of water services accounts is the first and most important step towards financial transparency.

1.2 The choice of indicators

The draft National Water Services Regulation Strategy states the following:

The Water Services Act sets out a comprehensive set of measures to be monitored in terms of water services authorities' water services functions. These are amplified in the relevant technical regulations published under that Act. In addition to these, both National Treasury and DPLG have reporting requirements related to the performance of water services. In total these constitute a somewhat overwhelming set of reporting requirements and there is limited capacity in water services institutions to measure and report on these (and in national government to meaningfully monitor all of them).

For this reason, the Strategic Framework elevated a limited set of key performance indicators for priority attention. Other elements of performance may be monitored, but priority and strategic attention will be given by the regulator to these nine key performance indicators. These priority indicators are listed in the text box below.

Performance indicators contained in the Strategic Framework:

1. Access to basic water supply
2. Access to basic sanitation supply
3. Quality of services: Potable water quality
4. Quality of services: Continuity of supply
5. Access to free basic services (water)
6. Access to free basic services (sanitation)
7. Financial performance: Affordability and debtor management
8. Asset management: Metering coverage and unaccounted-for water
9. Protection of the environment: Effluent discharge quality

It was recognised at the time of drafting the Strategic Framework that these indicators would need to be further developed and elaborated while maintaining the essential principle of a limited set of high-level key performance indicators. The National Water Services Regulation Strategy used these indicators as a starting point and refined them into the following key performance measures. Note: these indicators have been updated subsequently updated.

Performance measures to be monitored by water services authorities

- 1. Access to a basic water supply service**
 - 1.1 percentage access to at least a basic water supply
 - 1.2 absolute backlog
 - 1.3 rate of reduction in backlog
- 2. Access to a basic sanitation service**
 - 2.1 percentage access to at least a basic sanitation service
 - 2.2 absolute backlog
 - 2.3 rate of reduction in backlog
- 3. Drinking water quality**
 - 3.1 programme for water quality monitoring in place
 - 3.2 water quality indicator (percentage samples passing SANS 241)
- 4. Impact on the environment**
 - 4.1 status of effluent treatment works
 - 4.2 effluent quality monitoring system in place
 - 4.3 percentage samples passing the minimum standard
 - 4.4 assessments of treatment works
- 5. Strategic asset management and water demand management**
 - 5.1 meter coverage
 - 5.2 metering efficiency (unaccounted for water)
 - 5.3 asset management plan in place
 - 5.4 audited water services asset register
- 6. Customer service standards**
 - 6.1 continuity of water supply: number of households experiencing an interruption of greater than 48 hours per incident
 - 6.2 continuity of water supply: number of interruption of greater than 6 hours, 24 hours and 48 hours per incident per 1000 connections
- 7. Financial performance**
 - 7.1 water services financial audit
 - 7.2 collection efficiency
 - 7.3 average debtor days
 - 7.4 financial self-reliance
 - 7.5 average domestic tariff
- 8. Institutional effectiveness**
 - 8.1 number of employees per 1000 connections
 - 8.2 WSA annual report submitted to the Minister

Source: draft National Water Services Regulation Strategy (August 2005)

As a starting point, the National Benchmarking Initiative sought to measure performance based on these indicators (the regulatory key performance measures). The intention was to elaborate on these over time, in consultation with water services authority managers. See section 3 for discussion about the indicators used and their definitions.

A group of nine municipalities forming part of the South African Cities Network and constituted as the City Water Managers Forum has undertaken a benchmarking initiative for the last three years. The additional indicators that this Forum has benchmarked are reported on in section 4.

1.3 An annual report on sector performance

An annual report on sector performance will be published by DWAF. The details of this report are set out in the draft National Water Services Regulation Strategy (see text box below).

Annual report on sector performance

DWAF will publish an annual report on sector performance. This report will be based on:

- Reporting by water services authorities on the key regulatory performance indicators set out in this strategy.
- Financial reporting by water services authorities to National Treasury (on the basis of audited financial statements for water services, and common accounting conventions and reporting formats).
- Reporting by water boards on performance in terms of a standard framework (Annual report, with key performance indicators as required by DWAF).
- Reporting by water boards on financial performance (Audited financial statements).
- Regulatory interventions made by DWAF during the reporting period.

Source: draft National Water Services Regulation Strategy

1.4 Creating positive incentives to report and to perform

The draft National Water Services Regulation Strategy sets out a system for creating positive incentives to report and to perform, as follows:

In view of the limited capacity within the sector to report on just a few high-level key performance indicators, achievement of sound and verifiable performance should be encouraged through a system of positive incentives. The key elements of a positive incentive system for reporting are as follows:

- *First time reporting on each indicator in a reliable and verifiable way is recognised by giving a small (but not insignificant) reward to the water services authority.*
- *This reward may be used (only) for the purposes of visiting another water services authority to learn about best-practice management in an identified area. This learning is reported on and made available to the sector as a whole.*
- *Budgetary implications of such awards need to be noted and provided for in the annual budget of DWAF.*

Improved performance brings its own rewards. Nevertheless, in addition to these rewards, significant rewards will be made available to the following two water services authorities:

- *the best performer in the country (based on a combined aggregated and weighted score of the key performance indicators); and*
- *the most improved performer in the country (the water services authority who demonstrates the most significant improvement between periods based on an aggregated and weighted score of the key performance indicators).*

The reward to each water services authority will be to send three people (one of whom must be the senior water services provider manager) on a study tour to a selected country to learn from best-practice water services management in that country and to communicate this learning to the rest of the sector on return.

It is the intention of the National Benchmarking Initiative to link with this system when it is set up. The annual Water Services Benchmarking Conference can be used for this purpose.

2 The benchmarking process

2.1 The annual benchmarking cycle

It is intended that the National Benchmarking Initiative be managed in terms of an annual cycle as shown in Table 1. The cycle is based on the municipal financial year ending on 30 June and allows for a period of two months after the year end for water services authorities to complete their financial statements and to collate their performance data.

Table 1: Timetable for the annual benchmarking process

Month	J	F	M	A	M	J	J	A	S	O	N	D
Activity (responsibility)												
1. Final benchmarking report circulated to water services authorities (IA)	X											
2. Indicators for next round finalised (NBI Steering committee)	X	X										
3. Consultation with participants (SALGA)	X	X	X									
4. Participation for next round agreed (SALGA)			X									
5. Revised indicator sheets circulated to water services authorities (PSP)			X	X								
6. Water services authorities review, verify and correct data submitted for the previous round (water services authorities)	X	X	X	X	X	X						
7. Municipal financial year end 30 June.						X						
8. Preparation (collation of financial and performance data) (water services authorities)							X	X				
9. Visits to participating water services authorities (previous round) (PSP)	X	X	X	X	X	X	X	X				
10. Planning for next round (PSP)							X	X				
11. Visits with participating water services authorities (completion of indicator and performance sheets) (PSP)									X	X		
12. Analysis and verification (PSP)											X	
13. Annual benchmarking conference (early December) (PSP)												X
14. Preparation of benchmarking report (by 31 December)												X

Notes: IA = Implementing agent; PSP = benchmarking service provider.

2.2 Constraints experienced for the 2004/5 round

It is important to note that the time-frames indicated above were considerably squeezed for the first round. The service provider was only appointed in mid-September 2005 and the participants only confirmed during the course of October. This left just two weeks for visiting

water services authorities and for the completion of the performance indicator sheets. The primary consequences of these shortened time-frames were as follows:

- Some of the identified municipalities were not able to participate. (Data for only 24 out of the 40 municipalities was provided. A further two municipalities did provide data but this was received too late to be included in the analysis.)
- Those who did participate were not able to supply the necessary data to compute all of the performance indicators. (Only 57% of the indicators were able to be calculated for the participating municipalities.)
- There was inadequate time to allow participating municipalities to verify the data supplied and the computed performance indicators.

In addition to these important constraints, many of the participating municipalities also indicated that they did not have the necessary internal capacity to participate in the process adequately and to manage the information necessary to compute the benchmarks.

2.3 Participating municipalities

SALGA has the primary responsibility to identify potential participants and to engage with them to obtain their willingness to participate in the benchmarking process. Forty municipalities were identified by SALGA and accepted by the National Benchmarking Initiative steering committee.

The following 24 municipalities were able to participate in the 2004/5 round (see “Constraints” above):

Metropolitan Municipalities	District Municipalities	Local Municipalities
Johannesburg	Central	Msunduzi
Tshwane	Bophirima	Mangaung
Ekurhuleni	Sekhukhune	Buffalo City
eThekweni	Capricorn	Potchefstroom
Nelson Mandela	Ukhahlamba	Lephalale
Cape Town	Chris Hani	Ngwathe
	Amatole	JS Moroka
	Sisonke	Rustenburg
	iLembe	
	Ugu	

A further two municipalities did provide data but this was too late to be included in the analysis. Their data will be included in the following round.

Because of the constraints set out in section 2.2, and the consequent lack of opportunity for municipalities to verify the information supplied, *the individual performance of each municipality has not been revealed in this report*. Instead, each participating municipality is identified in terms of a code as follows: M1, M2 (etc.) for metropolitan municipalities, DM1, DM2 (etc.) for district municipalities and LM1, LM2 (etc.) for local municipalities. The participating municipalities have been given their own codes so that they can compare their own performance with that of their peers.

In future, municipalities will have the opportunity to verify the benchmarks that have been supplied and computed. Consequently, the names of individual municipalities will be revealed when reporting performance.

2.4 Level of confidence in the performance indicators

Each performance indicator (or grouping of like indicators) was coupled to one of the following “level of confidence” indicators:

1. Estimate or guess.
2. Information from a reliable system or source.
3. Information from an auditable source.
4. Audited information.

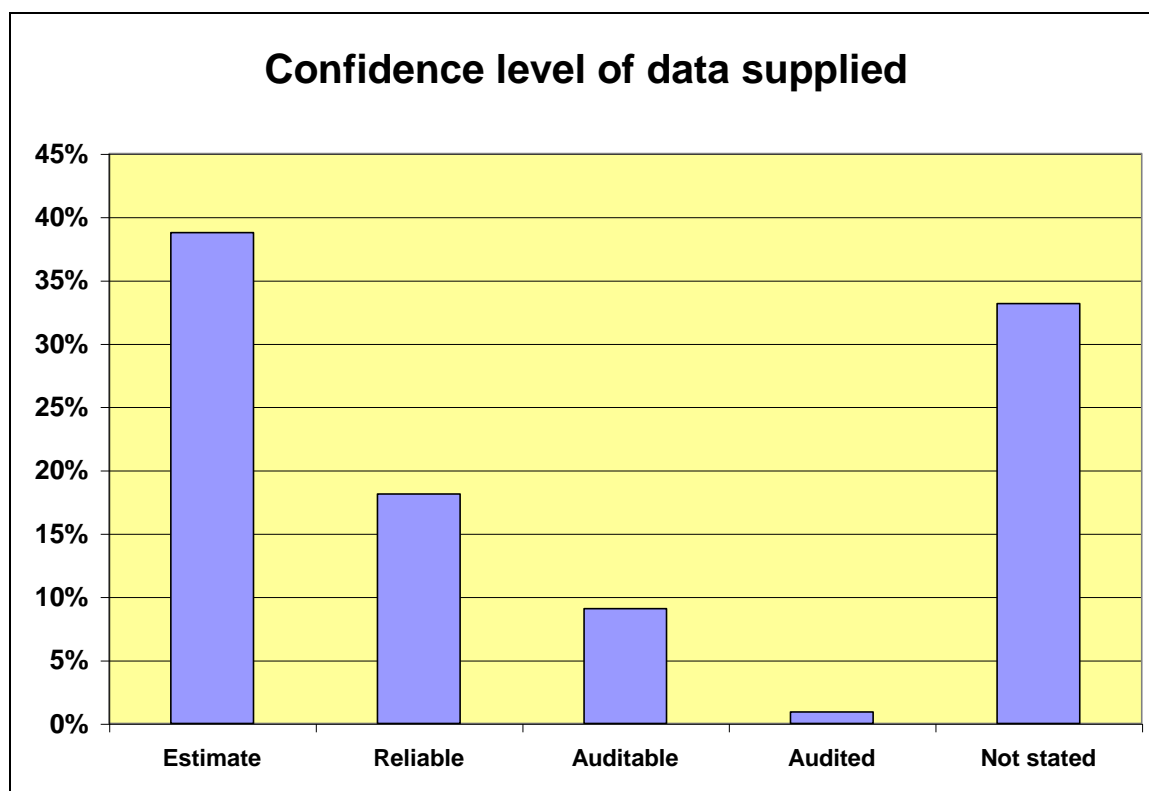


Figure 1: Level of confidence of data supplied

Only two thirds of the indicators supplied had a level of confidence indicated. This is primarily due to the time constraints mentioned in section 2.2 as there is really no reason why this information should not be supplied for each indicator.

Recommendation: In the next round of benchmarking, the service provider will be much more insistent and thorough in obtaining a level of confidence indication for each indicator supplied or computed.

Most of the data supplied was considered to be an estimate or a guess. Only 1% of the indicators supplied were derived from audited data. The level of confidence in the data supplied should improve over time.

There was some confusion regarding the distinction between levels 2 and 3.

Recommendation: It is recommended that the level of confidence indicators be reduced from 4 to 3 by eliminating the current level 3 indicator (information from an auditable source). The new indicators for the level of confidence in the information supplied will be as follows:

1. Estimate or guess.
2. Information from a reliable system or source.
3. Audited information.

3 Performance outcomes – regulatory KPIs

3.1 Introduction

This section sets out the performance of municipalities (water services authorities) in terms of the regulatory key performance indicators (KPIs), under the following headings:

- Definitions
- Sources of data (if relevant)
- Extent of reporting and confidence levels
- Performance outcomes
- Summary of performance outcomes
- Implications
- Recommendations

Note to reader: The reader should refer to the indicator data sheet template for a more detailed description of each indicator and the supporting data required to calculate the indicator. In the figures, below, the terms “returns” and “reliability” are used. *Returns* refers to the percentage of the 24 participating municipalities that supplied data for the indicator. *Reliability* refers to the average reliability of all returns for which a level of confidence was given. An average of 1 would indicate that all returns are estimates or guesses. An average of 4 would indicate that all returns have been audited. For the sake of brevity, the word “sample” is used to refer to the participating 24 municipalities.

3.2 Institutional context

For the purposes of context, some contextual data relating to the participating municipalities is given below.

Population

The reported population for each municipality is shown in Figure 2.

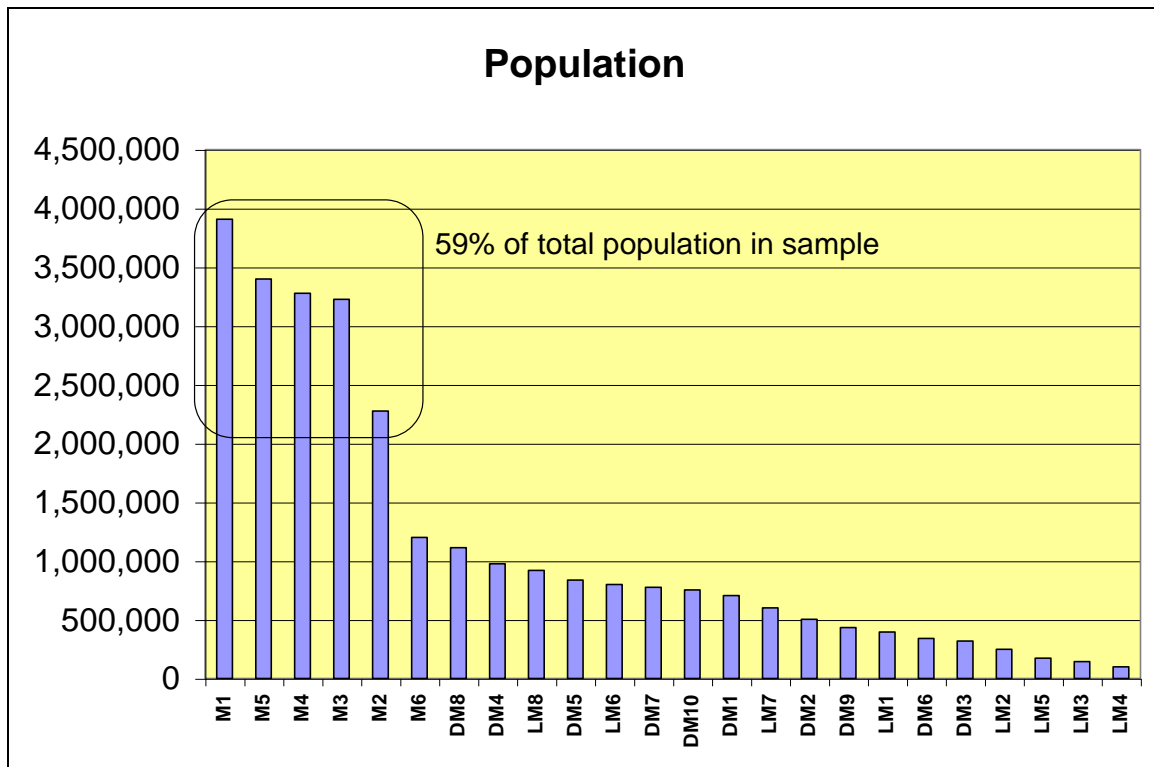


Figure 2: Reported populations

The five largest metropolitan municipalities account for 59% of the population in the sample.

Scale of operations

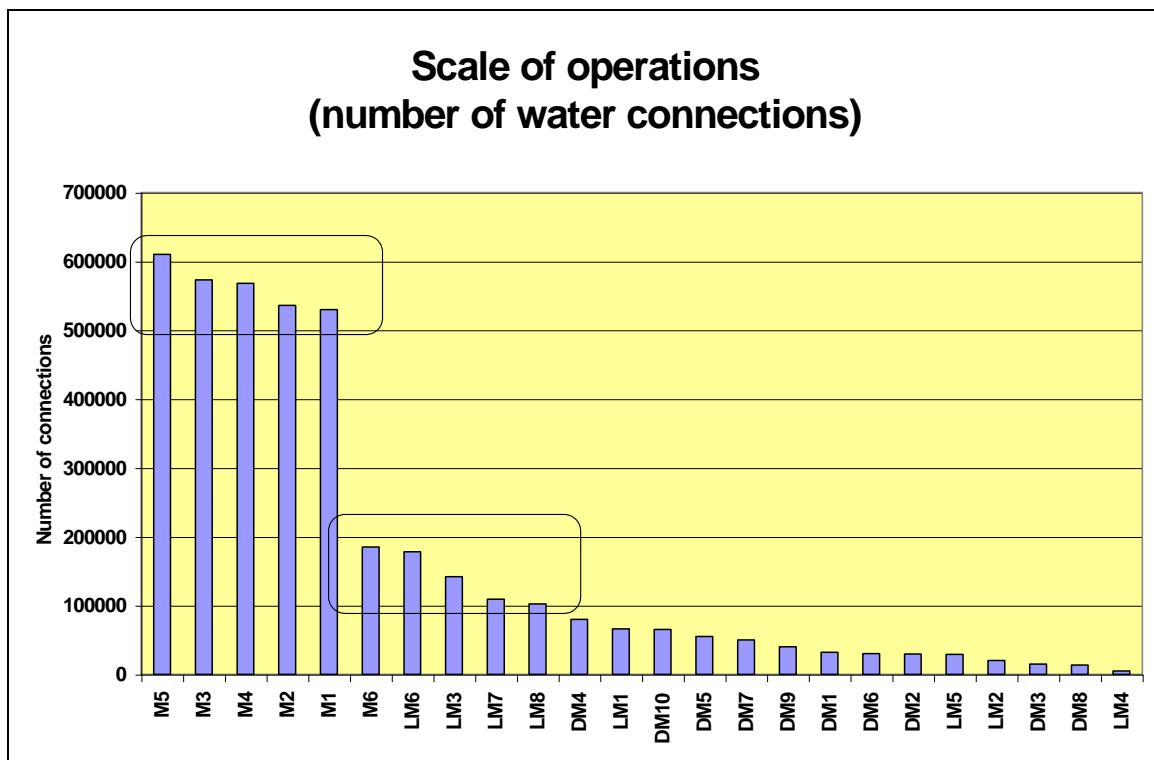


Figure 3: Scale of operations

The five largest metropolitan municipalities each have more than 500 000 water connections and can be compared to major urban water utilities internationally. Each operation has a turnover in the order of a billion Rand or more. These are significant and complex businesses which need to be run on a professional basis.

There is a second grouping of medium-scaled, largely urban operations (between one and 200 000 water connections).

Urban – rural distribution

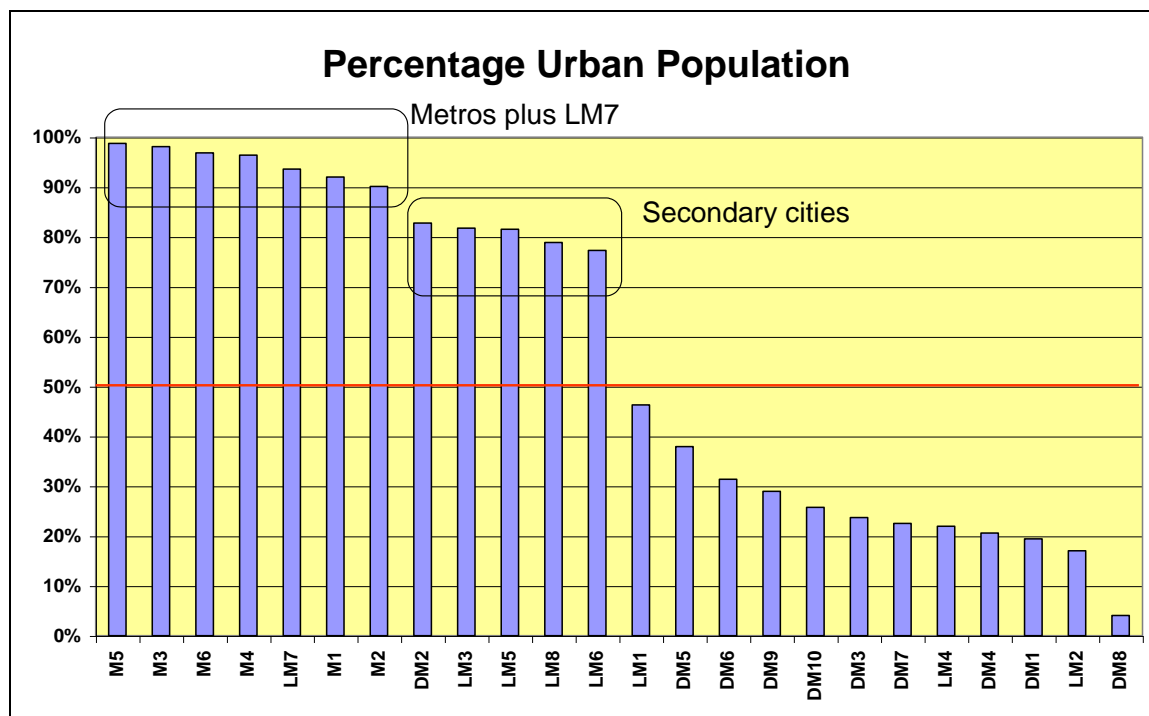


Figure 4: Percentage urban populations

Half of the sample is predominantly urban (greater than 75%). The rest have larger rural populations than urban populations.

3.3 Access to basic water services

Definitions

Ref no	Indicator	Definition
1.1	Percentage access to water supply	Proportion of people with access to at least a basic level of water supply as defined in the Strategic Framework.
1.2	Absolute backlog (water supply)	Number of people without access to at least a basic water supply (as per the definition in the Strategic Framework). This includes those with no formal service <i>and</i> those served, but to below basic level.
1.3	Rate of reduction in backlog (water supply)	The percentage reduction in the number of people without access to at least a basic water supply (as per the definition in the Strategic Framework).

Ref no	Indicator	Definition
2.1	Percentage access to a basic sanitation service	The proportion of households with access to at least basic level of sanitation service.
2.2	Absolute backlog (sanitation)	Number of households without access to at least a basic sanitation service (as per the definition in the Strategic Framework). This includes those served, but to below basic level, those with a bucket disposal service and those with no service.
2.3	Rate of reduction in backlog (sanitation)	The percentage reduction in the number of households without access to at least a basic level of sanitation service (as per the definition in the Strategic Framework).

Comments on the definitions

1. **Consistency with national policy.** These definitions follow those set out in the Strategic Framework for Water Services.
2. **Unit of measure.** Participating municipalities made a strong request to measure the backlog in terms of households rather than people. Participating municipalities also requested that the rate of reduction take into account the annual increase in the number of households in the supply area.
3. **Definition of basic sanitation.** Chemical toilets, bucket systems and unimproved pit latrines are not included in the definition of “at least basic” sanitation.

Sources of data

The draft National Water Services Regulation Strategy states that it is desirable that there be one national uniform reporting mechanism for information related to access to basic services and that the natural home for this is DPLG, because DPLG administers Municipal Infrastructure Grant (MIG) funds. Consequently, it is anticipated that, in future, information on access to water services will come from this system and not through the benchmarking process. However, until such a system is in place, municipalities will be asked to report on backlogs as part of the benchmarking process.

Extent of reporting and confidence levels

Obtaining reliable and up-to-date data on access to services is challenging for at least the following reasons:

- Reliable up-to-date population data is not available in most municipalities.
- Most municipalities do not have comprehensive and up-to-date asset registers, consumer databases and linked GIS systems.
- Households without access to services are typically not “on the system” (that is, they are not on the municipalities’ consumer database) nor “on the map” (living on a municipal-registered plot).
- Changes in settlements and services can be quite rapid. This means that the census data is typically out of date and municipal databases, where these exist, need to be continuously updated.

Nevertheless, all 24 municipalities were able to report access figures. Not surprisingly, most of these were considered to be estimates or guesses.

Performance outcomes – access to a basic water supply

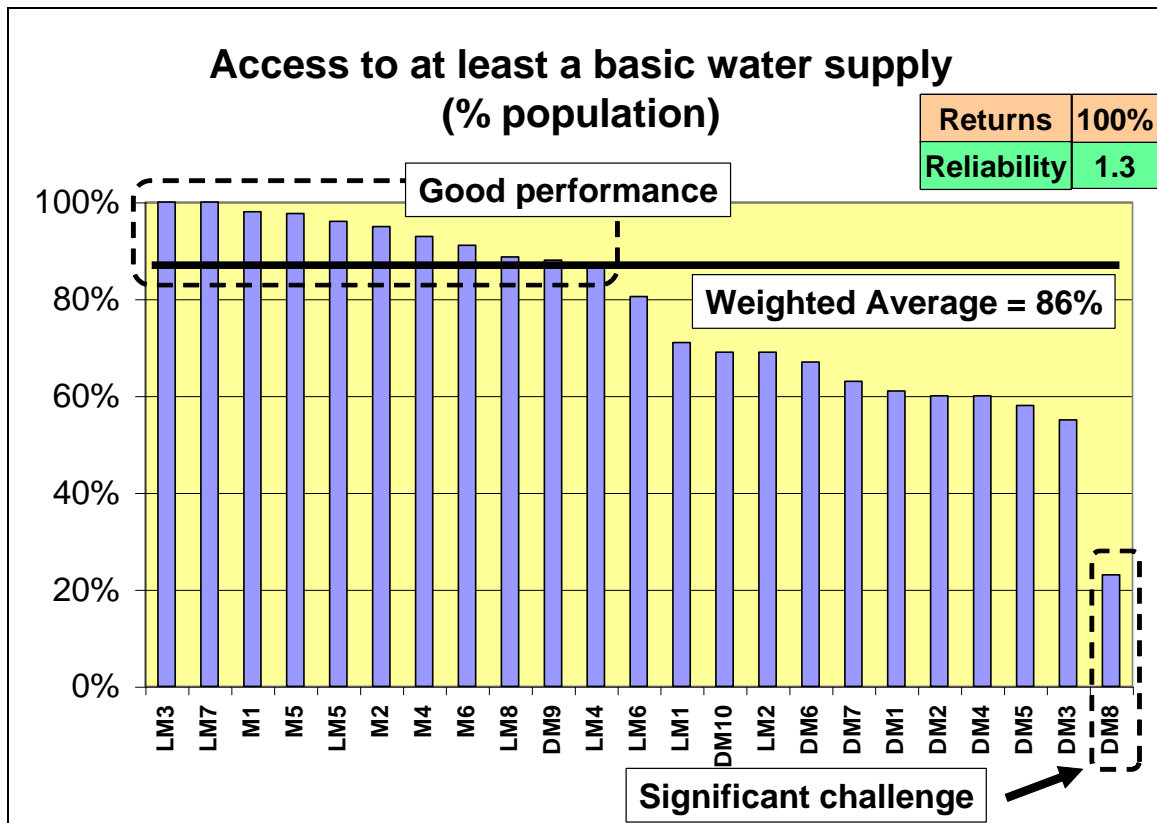


Figure 5: Percentage population with access to at least a basic water supply service

Access to at least a basic water supply service ranged from 23% to 100%, though it is implausible that two municipalities have no water service backlog at all. The weighted average (taking into account the populations in each municipality) was 86%.

The absolute number of people without access to at least a basic water supply service is shown in Figure 6.

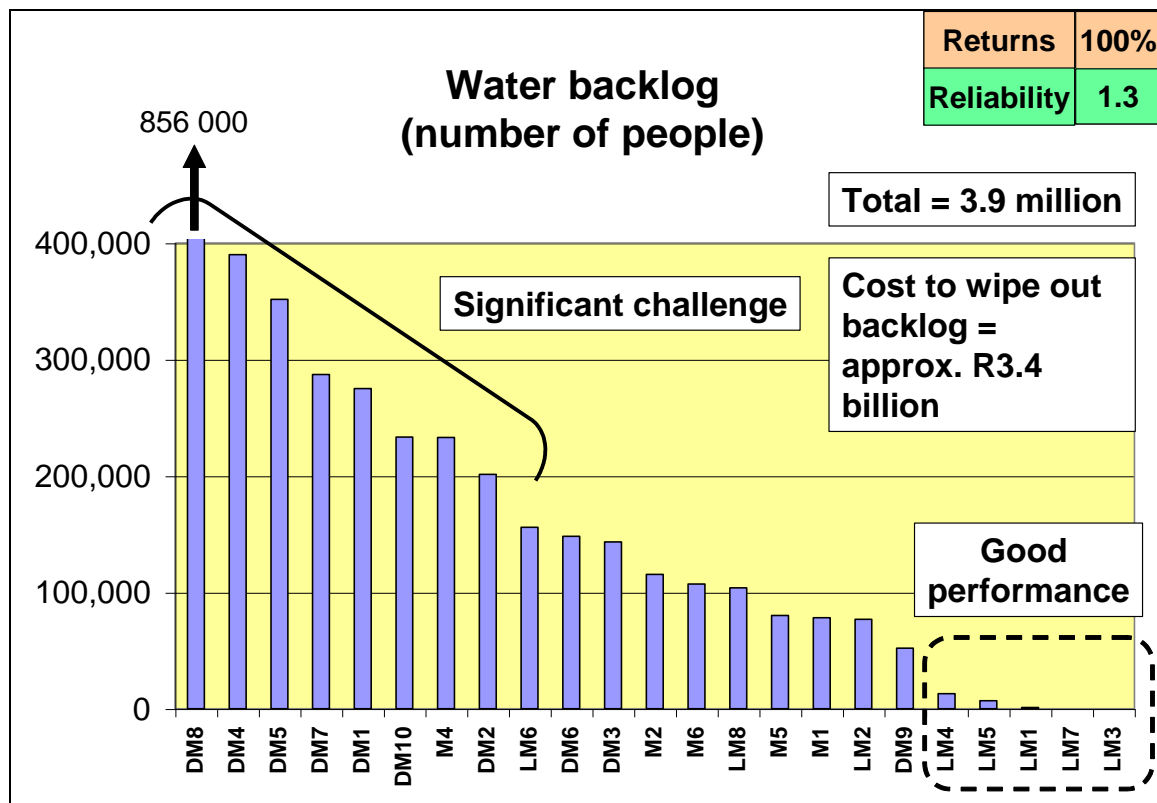


Figure 6: Water backlog (number of people)

The total number of people in the sample without access to at least a basic water supply service is 3.9 million. The total cost of wiping out the backlog is approximately R3.4 billion (assuming R3 500 per connection and four people per connection). (It is not sensible to extrapolate these numbers to a national total.)

The greatest challenges with respect to access lie in the district municipalities with large rural populations. Some metropolitan municipalities also have large numbers of people without access to at least a basic water supply service.

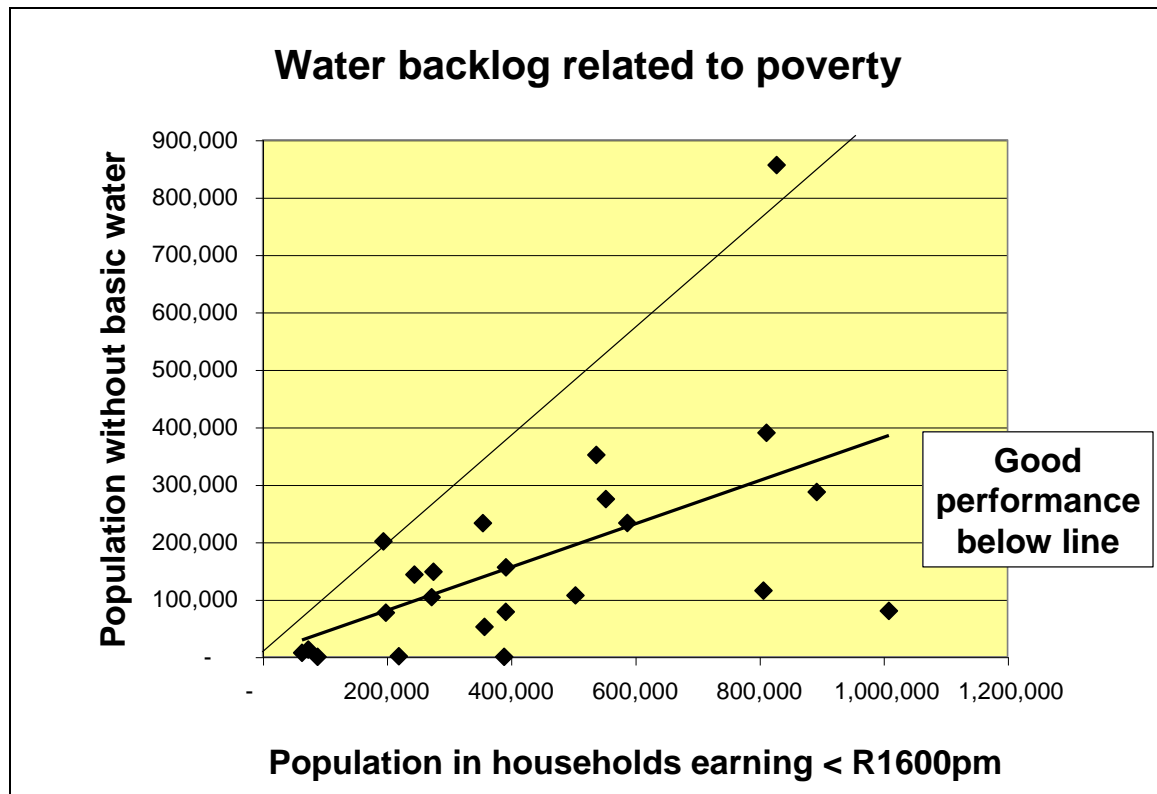


Figure 7: Relationship between backlog and income (for water)

Note: The standard version of Excel does not have a facility to add labels to an XY graph so as to be able to indicate municipal codes for each data point. Readers can identify the relative position of their own municipality by referring to the values in the data sheet. It is possible to get an extension to Excel which has this feature. This feature will be incorporated in next year's report.

As one would expect, the number of people without access to at least a basic water supply is less than the population living in households earning less than R1 600 per month in most municipalities.

The rate of reduction in the backlog is shown in Figure 8.

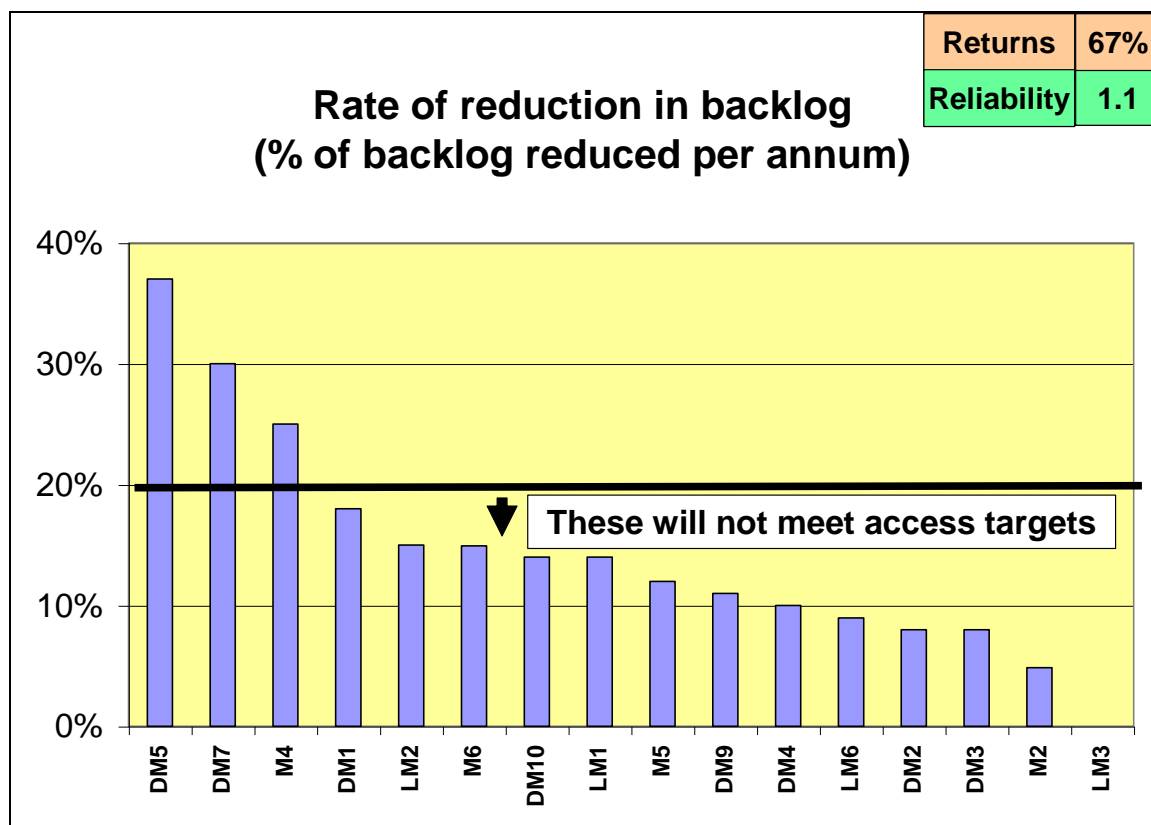
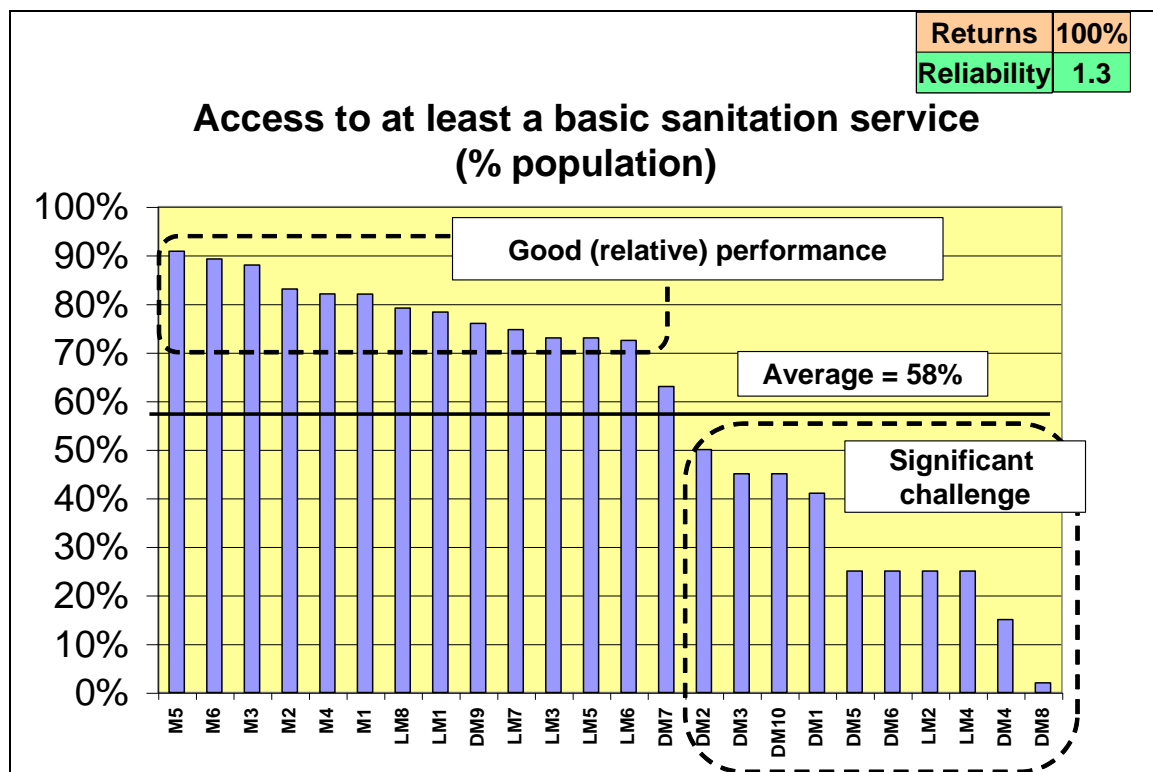


Figure 8: Rate of reduction in backlog to a basic supply

In order to meet the national target to eliminate the backlog by 2008, municipalities need to be reducing their backlog by at least 25% per annum. Most municipalities are not making progress at this rate.

Summary of performance outcomes – access to a basic water supply

- Water backlogs in excess of 30% of the population: 11 out of 24 municipalities.
- Water backlogs exceeding 200 000 people: 8 out of 24 municipalities.
- Municipalities unable to make the target date for elimination of water backlog at their present rate of progress: 12 out of 15 municipalities.

Performance outcomes – access to basic sanitation**Figure 9: Percentage population access to at least a basic sanitation facility**

Access to at least a basic sanitation service ranged from almost 0% to 90%. The weighted average (taking into account the populations in each municipality) was 58% (much lower than the 86% weighted average for access to water).

The absolute number of people without access to at least a basic sanitation service is shown in Figure 10.

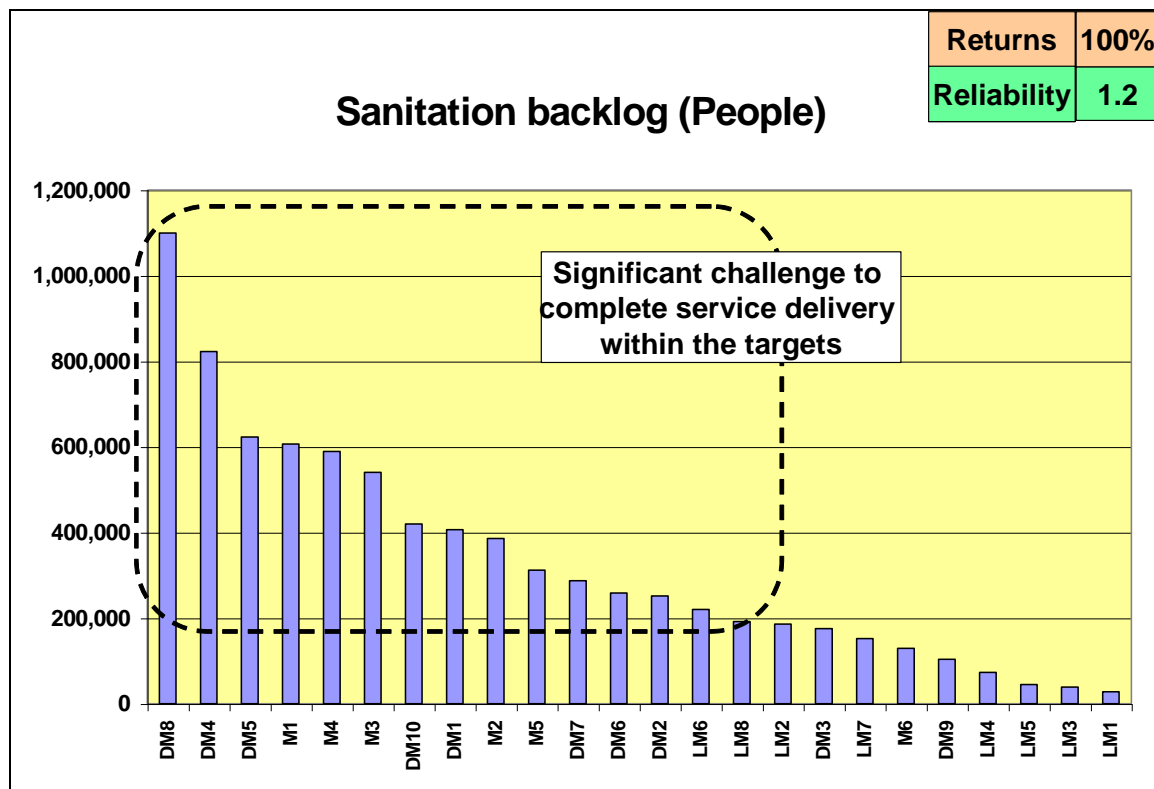


Figure 10: Sanitation backlog (number of people)

The total sanitation backlog is 7.9 million people (for the sample). The cost of eliminating this backlog is approximately R7 billion (assuming a cost of R3 500 per household and an average household size of 4). (It is not sensible to extrapolate these figures to the national level.)

Fourteen municipalities have a sanitation backlog which exceeds 200 000 people. This poses a significant challenge to the goal of meeting the national target of eliminating the backlog by 2011 (as set out in the Strategic Framework for Water Services).

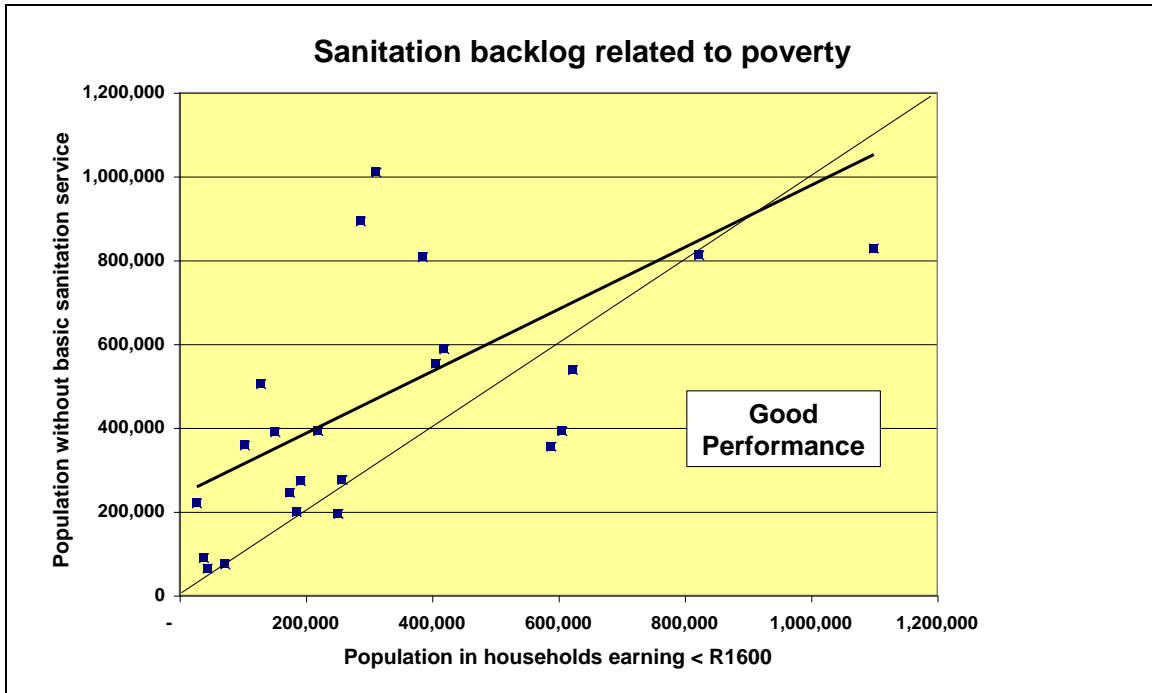


Figure 11: Relationship between backlog and income (for sanitation)

In only five municipalities is the number of people without access to at least a basic sanitation facility less than the population living in households earning less R1 600 per month.

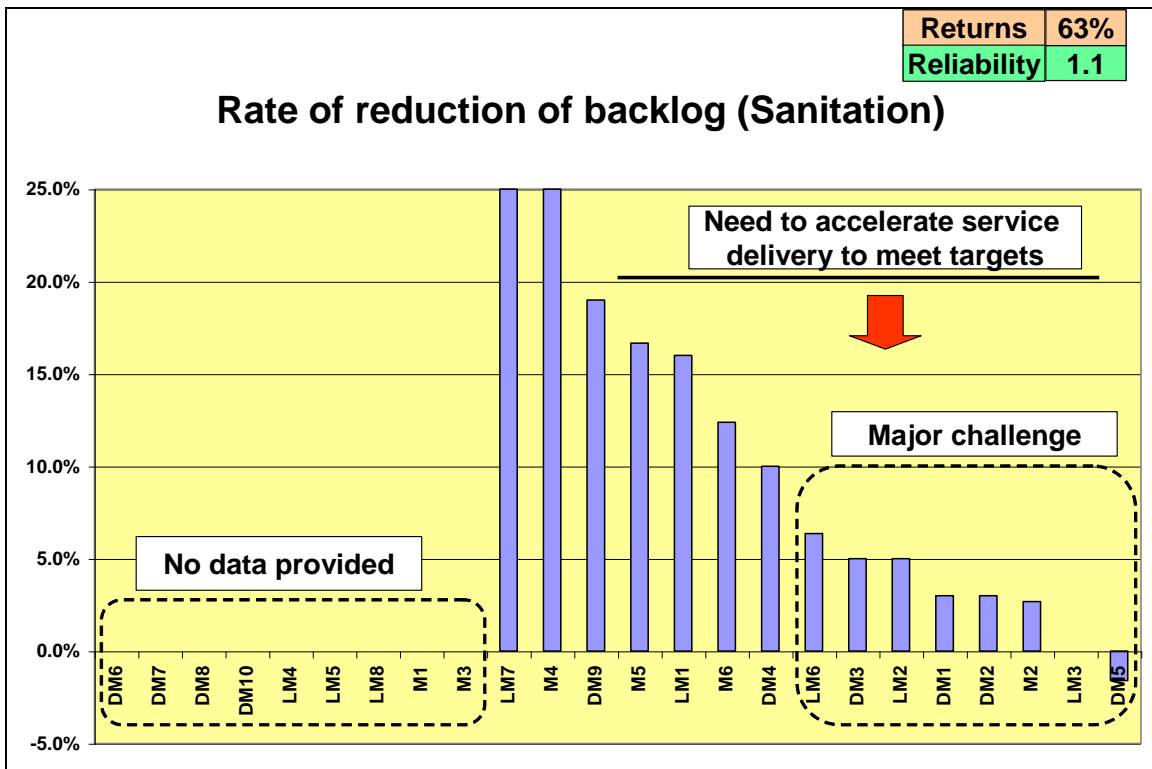


Figure 12: Rate of reduction in sanitation backlog

Most municipalities will need to accelerate the rate of delivery of sanitation services significantly if the national target is to be met.

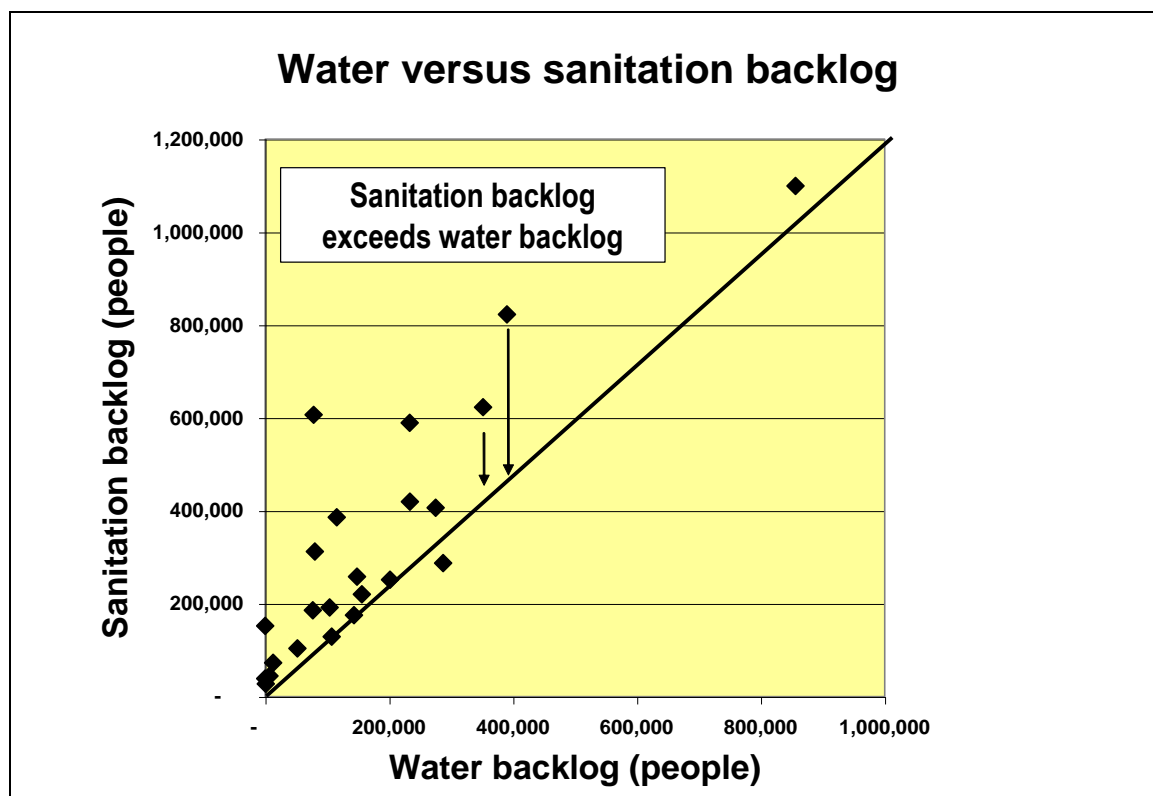


Figure 13: Sanitation backlog compared to water backlog

As expected, the sanitation backlog exceeds the water backlog in all municipalities.

Summary of performance outcomes – access to basic sanitation

- Municipalities that have a sanitation backlog of greater than 30% of the population: 11 out of 24 municipalities (same as water).
- Municipalities that have sanitation backlogs exceeding 200 000 people: 14 out of 24 municipalities (water was 8 out 24).
- Municipalities that will not make the target date for elimination of sanitation backlog at their present rate of progress: 13 out of 15 municipalities.
- The magnitude of sanitation backlog greatly exceeds the water backlog (7.9 million people compared to 3.9 million).

Implications

1. Most of the data on access to services was considered to be an estimate or guess. More effort is needed to develop a uniform and reliable reporting mechanism, linked to the MIG funds.
2. The current rate of reduction of backlog is insufficient to meet the national targets for elimination of the backlog. This means that the current way of doing things will not result in the targets being met.
3. More can be learned from some existing examples of good performance in order to emulate this performance in other municipalities.

Recommendation: National and local government will need to find a new way of doing things if the national targets for the elimination of the water and sanitation backlogs are to be met. Significant and dedicated resources will need to be devoted as a matter of urgency to understand the bottlenecks in delivery and to find ways of overcoming these.

3.4 Drinking water quality

Definitions

Ref no	Indicator	Definition
3.1	Programme for water quality monitoring is in place	The water services authority has instituted a programme of drinking water quality sampling in accordance with the Drinking Water Quality Framework (DWQF) and SANS 241 requirements. The following elements are satisfied: (1) testing requirements and standards are clearly defined for each source and supply area; (2) sampling is taking place as required; (3) tests are done through an accredited laboratory (accredited for the test regime); (4) results are recorded and stored; and (5) results are reported.
3.2	Water quality indicators	The percentage of samples (per annum) taken in monitoring drinking water quality that meet or exceeded the allowable quality parameters. A failure for one parameter represents a failure of the sample.

Comments on the definitions

- 1. Consistency with the National Drinking Water Quality Framework.** The objective is to use definitions which are consistent with the draft National Water Services Regulation Strategy and with the National Drinking Water Quality Framework. However, in view of the fact that the South African National Standard (SANS) drinking water quality standards are in the process of revision, there is some uncertainty about which standards should apply.
- 2. Specification of drinking water quality monitoring programme.** This is reasonably well specified. However, a "Yes/No" answer is not really adequate because it is often the case that the programme is in place for urban areas but not for rural areas. In this case, either a "Yes" or a "No" answer would be misleading. The definition is also misunderstood to apply to water exiting a water treatment works *whereas the programme is required to monitor the quality of water at the point of end-use* (that is, at the consumer's tap).
- 3. Specification of water quality indicator.** This is not adequately specified in the draft National Water Services Regulation Strategy. Although the specification was elaborated in the Indicator Sheets, there is still a degree of uncertainty and some duplication in the definitions. The uncertainty relates to the specific standards to apply for each parameter (see point 1 above). The duplication relates to the use of two indicators for E.Coli (a pass/fail indicator as well as a percentage sample failure indicator).

Sources of data

Every water services authority is required to have a drinking water quality monitoring and reporting programme in place. If this is the case, then the high-level performance outcomes for drinking water requested in this benchmarking process should be readily available. However, the outcomes of the exercise (see below) suggest that this is not the case (that is, in many instances an adequate and effective drinking water quality monitoring program is not in place).

Extent of reporting and confidence levels

The extent of reporting on drinking water quality (and the level of confidence expressed in the data supplied) was particularly poor (see details for each indicator below).

Performance outcomes – drinking water quality programme in place

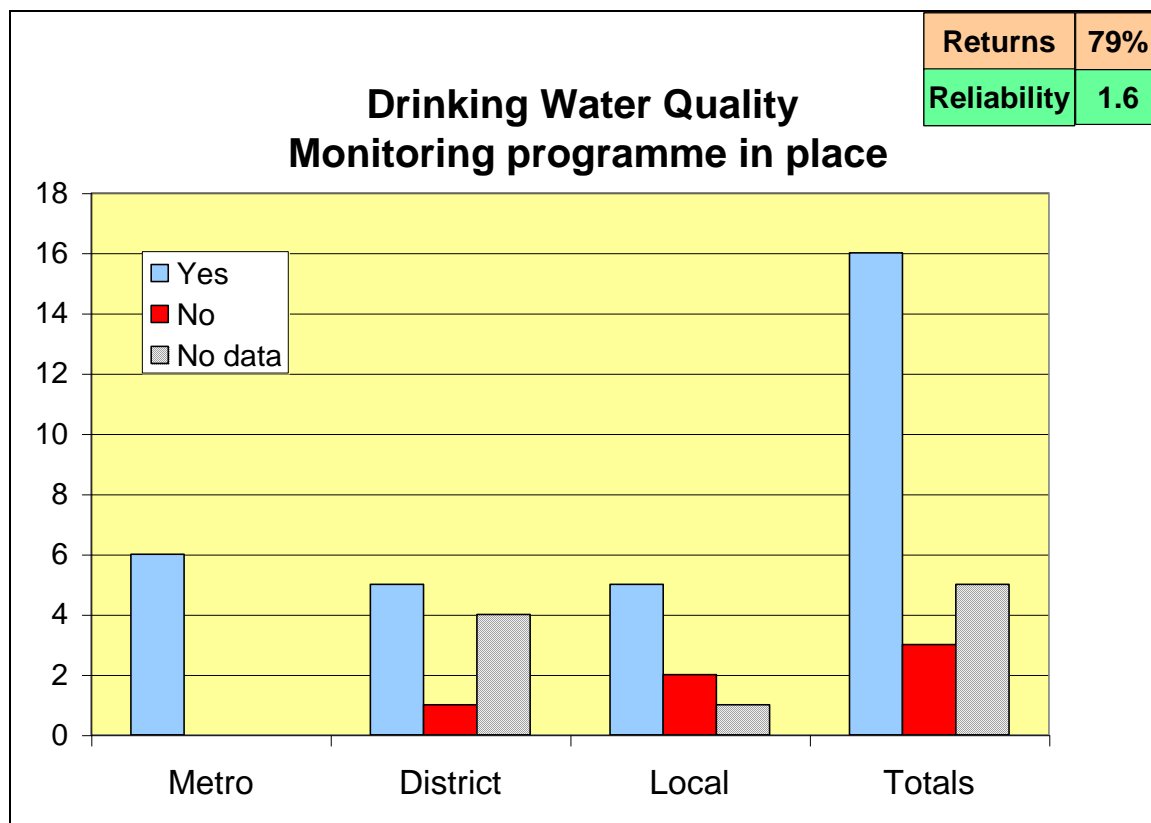


Figure 14: Drinking water quality monitoring programme in place

Only 16 out of the 24 municipalities (two thirds) reported that they had a drinking water quality monitoring programme in place that met the minimum requirements. This is a disturbing statistic. *One of the most important tasks of a water services manager is to ensure that the quality of drinking water supplied to consumers is safe and meets the minimum required standards. A failure to monitor this is serious, as lives could be at risk.*

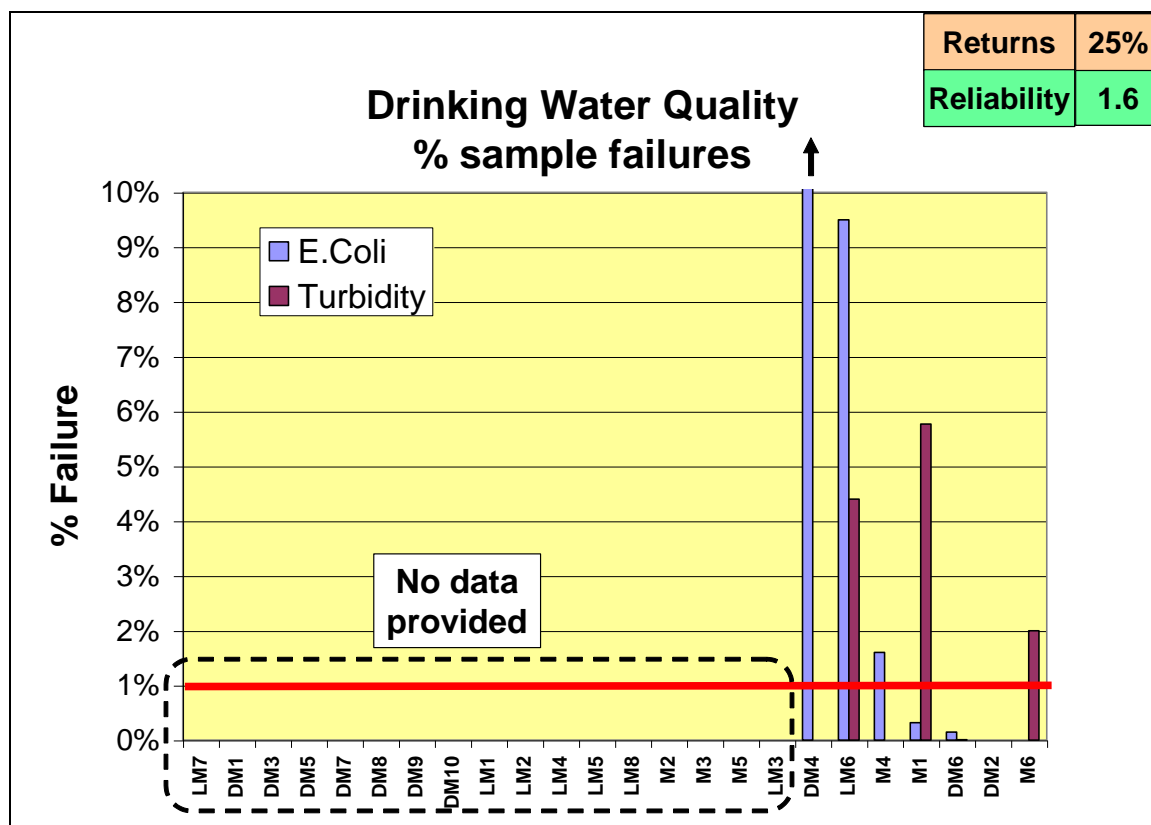


Figure 15: Percentage samples failing the relevant standard

Only 7 out of the 24 municipalities provided data on drinking water quality (percentage sample failures for E.Coli and Turbidity). This could be partly the result of the tight time constraints imposed on this round of benchmarking. Even so, this is a disturbing statistic.

Summary of performance outcomes – drinking water quality programme in place

- Only 16 out of 24 municipalities reported having a drinking water quality monitoring programme in place.
- Even in the 16, it is possible that the programmes do not comply fully with the required standards (for example, in rural areas).
- Basic compliance data could not be provided by 17 out of 24 municipalities. This may be partly due to time constraints in this round. *Nevertheless, this is probably the most significant risk issue facing the water industry.*

Implications

- Water services authority monitoring and reporting on drinking water quality is wholly inadequate. *Much greater attention (than is currently the case) must be given to the issue of drinking water quality monitoring and reporting.* This is a key priority area for attention.

Recommendation: DWAF must accelerate its roll-out of the National Drinking Water Quality Programme with the aim of getting adequate monitoring and reporting programmes in place in all municipalities as soon as is practically possible.

3.5 Impact on the environment

Definitions

Ref no	Indicator	Definition
4.1	Status of treatment works	Current status of treatment works including status of discharge and other licences.
4.2	Effluent quality monitoring system is in place	The water services authority is implementing an effluent discharge quality monitoring programme in accordance with nationally defined minimum standards. This has the following elements: (1) effluent discharge standards are clearly specified for each discharge point, (2) samples are taken as per the relevant standard, (3) samples are tested in an accredited laboratory (accredited for the test regime), (4) sample results are recorded and stored, and (5) results are reported.
4.3	Percentage of samples passing the minimum standard	The percentage of samples taken in monitoring effluent quality that meet or exceed the minimum requirements (flow-weighted by discharge point).
4.4	Assessment of treatment works	Proportion of treatment works that comply with the required output and treatment procedure requirements.

The draft National Water Services Regulation Strategy notes that wastewater treatment effluent quality is monitored and reported on by water services authorities. Compliance with discharge licences is monitored by DWAF.

Comments on the definitions

1. *Status of treatment works.* This is a straightforward definition and was well understood by the participating water services authorities. A wastewater treatment works is either operating in terms of a current licence or not, and a licence may have been applied for (or not).
2. *Specification of the effluent quality monitoring.* This is quite clearly specified and few problems were experienced in understanding the requirements.
3. *Percentage samples passing the minimum standard.* This required further elaboration, as different treatment works operate in terms of different licence conditions and standards. Water services authorities were required to calculate flow-weighted average compliance across all major standards (suspended solids, COD, Ammonia, Nitrate, Phosphorous and E.Coli.) and all treatment works.
4. *Assessment of treatment works.* This definition was not well understood and reported on. The intention is to know what proportion of treatment works within a water services authority complies consistently with its licence conditions. What was not well specified was what constituted compliance. For example, does a 97% compliance with a defined standard constitute compliance with the licence conditions? (This required clarification from DWAF.)

Sources of data

Every water services authority is required to have an effluent (waste discharge) quality monitoring and reporting programme in place. If this is the case, then the high-level

performance outcomes for effluent (waste discharge) requested in this benchmarking process should be readily available. However, the outcomes of the exercise (see below) suggest that this is not the case (that is, in many instances an adequate and effective effluent quality monitoring program is not in place). Alternatively, many water services authorities may not have been able to translate detailed data into a high-level summary.

Extent of reporting and confidence levels

The extent of reporting on effluent quality (and the level of confidence expressed in the data supplied) was poor (see details for each indicator below).

Performance outcomes

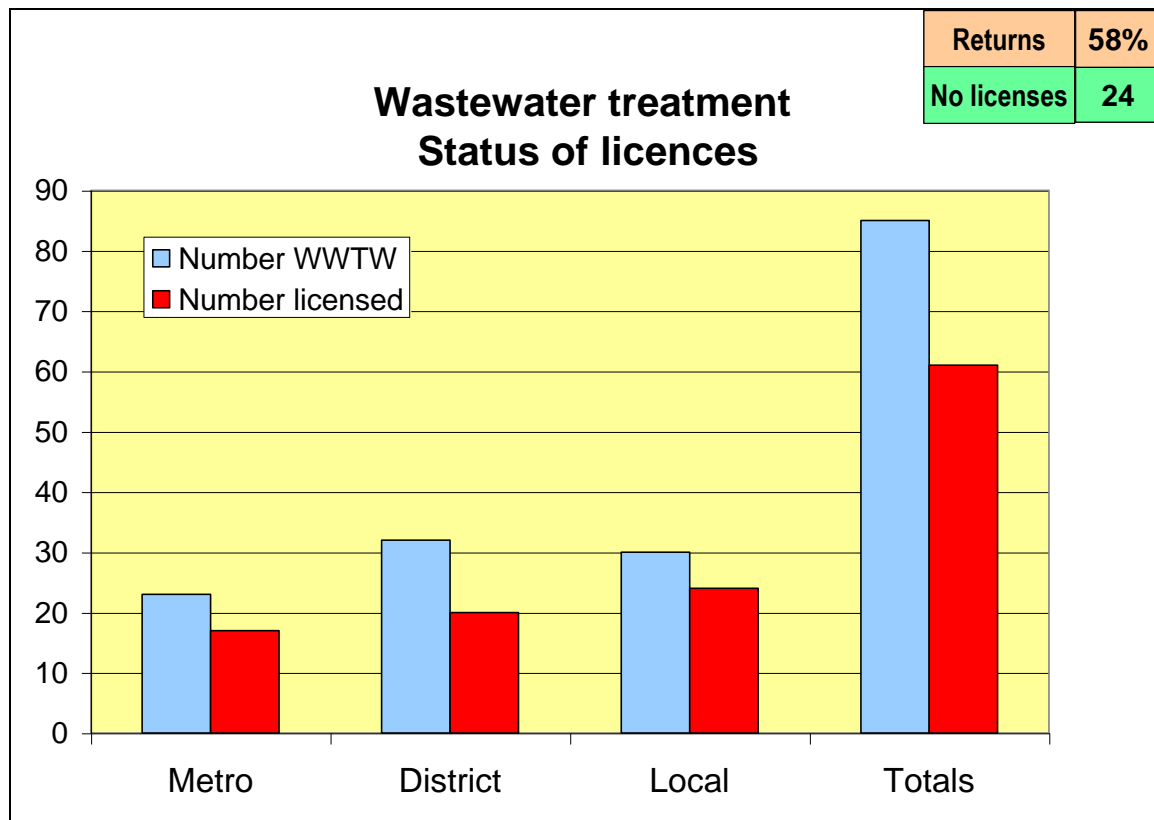


Figure 16: Status of wastewater treatment works

Only 58% of municipalities reported on the status of their wastewater treatment works. Eighty-five wastewater treatment works were identified, of which 24 had no current licence.

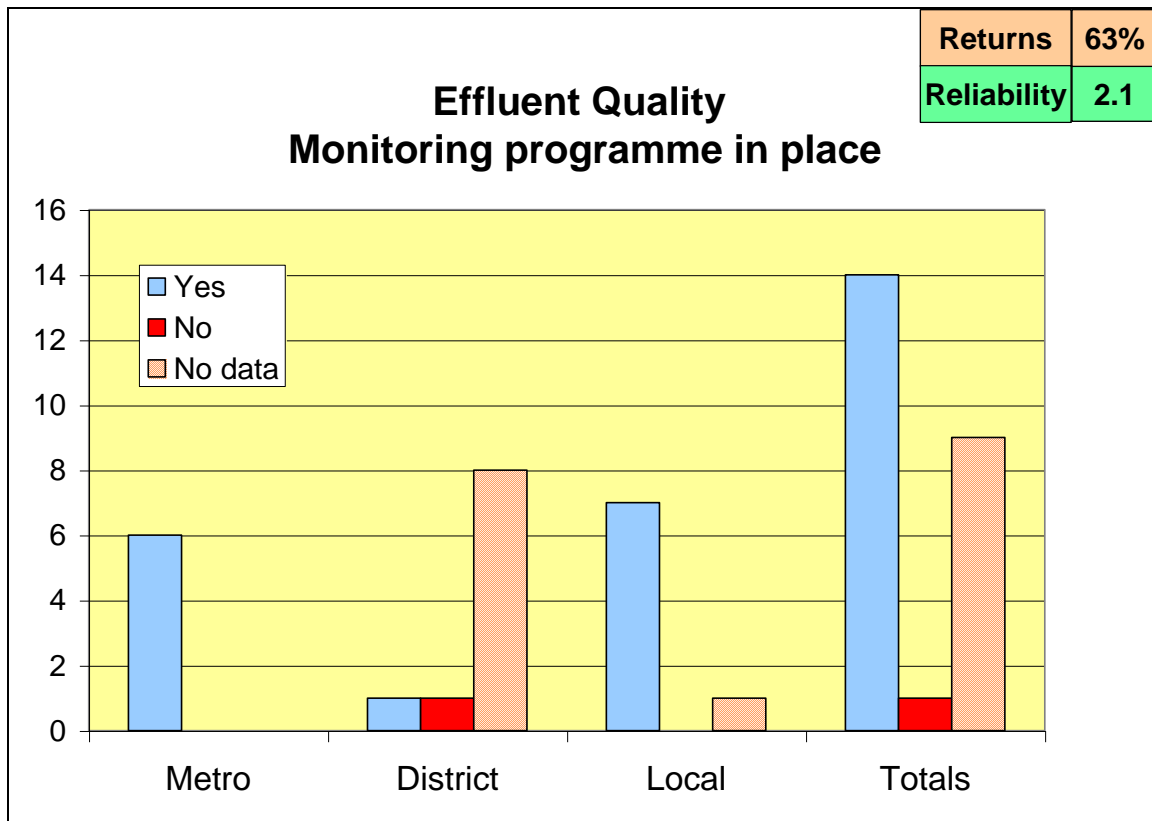


Figure 17: Status of effluent quality monitoring programme

Only 63% of municipalities reported on whether they had an effluent monitoring programme in place. Only one of the 15 municipalities that did report did not have a programme in place.

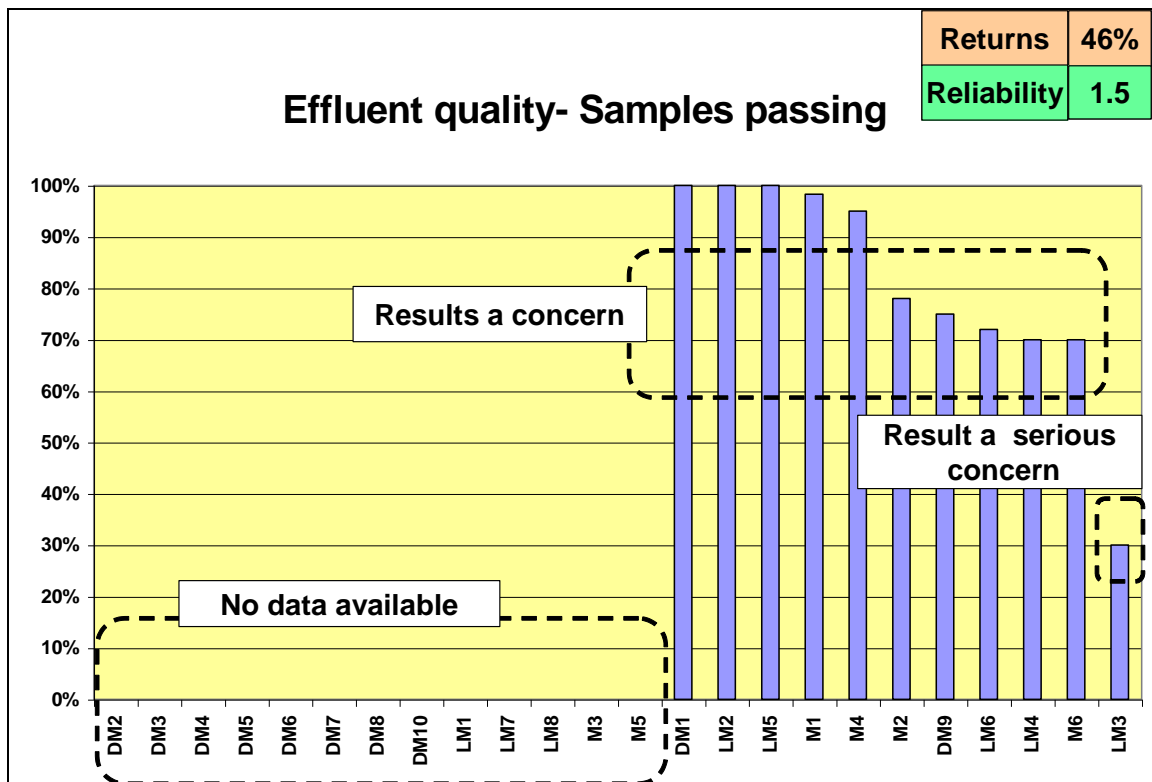


Figure 18: Effluent quality - percentage samples passing the required standard

Only 5 of the 11 municipalities that provided sample pass/failure data had effluent results that approached compliance (in the 95% or above range). Several reported high failure rates.

Summary of performance outcomes – environment

- Number of wastewater treatment works not licensed is 24 out of 85 (28%).
- Only 14 out of 24 have a monitoring system in place (58%).
- Only 11 of the 24 were able to report on compliance (46%).
- Only 5 of the 11, above, reported compliance that was above (or close to) the minimum standards.

Implications

The results suggest some cause for concern regarding the impact that municipalities are having on the environment and the quality of wastewater discharged.

3.6 Strategic asset management and water-use efficiency

Definitions

Ref no	Indicator	Definition
5.1	Meter coverage	The percentage metered end-use connections in relation to the total number of end-use connections.
5.2	Metering efficiency (“unaccounted for water”)	Volume of water which is supplied to end-users and metered, expressed as a percentage of the total input volume into the reticulation network.
5.3	Asset management plan in place	An asset management plan for water and sanitation infrastructure and operations in place and approved by Council.
5.4	Audited water services asset register	Water services asset register to the required standards in place and receiving an unqualified audit report.

Comments on the definitions

1. **Meter coverage.** In terms of the regulations relating to the Water Services Act, all unrestricted-volume water connections must be metered. This definition was elaborated in the data sheet to take into account whether or not connections were volume restricted. Examples of volume-restricted connections include low pressure tanks and connections with restrictors on them. There is a grey area related to communal standpipes, however. Although ideally all communal standpipes should be metered, this is not always practical or cost-effective. In this case metering a defined group of standpipes to monitor consumption may be sufficient. The definition of meter coverage needs to take this into account.
2. **Metering efficiency.** This definition is open to interpretation and more effort needs to be exerted to ensure a standard interpretation. Issues arise where groups of standpipes or low pressure tank supplies, for example, are metered as a group and not individually. Strictly speaking, only volumes metered at the point of end-use should be included in the calculation of the volume of water supplied and metered.
3. **Asset management plan in place.** An asset management plan is a plan which sets out how water services assets will be managed over time. Key elements of an asset management plan are as follows: asset maintenance, asset replacement, life-cycle costings, and optimisation of maintenance and replacement. A water services

development plan which includes these elements adequately can be considered to be an asset management plan. It is recognised that having an asset management plan is insufficient on its own and, further, that a municipality might not have a plan but nevertheless manage its assets better than a municipality that does have a plan.

4. **Audited asset register in place.** This was separated into two sub-parts in the indicator sheet: an up-to-date asset register in place, and an asset register that has been audited (with audit date supplied).

Appropriateness of grouping of indicators

Some questions were raised at the annual benchmarking conference as to the appropriate grouping of these indicators. There are many ways to group indicators and no one method is better than any other. Metering efficiency could also be considered to be an operational indicator, for example. In view of the fact that there is not a set of operational indicators (as the regulatory indicators are high-level outcome indicators), and due to the fact that it is not possible to manage water services assets well unless water supplied is metered, metering efficiency was included in an asset management set.

Data sources

The information for these indicators should come from a municipality's management information systems.

Performance outcomes

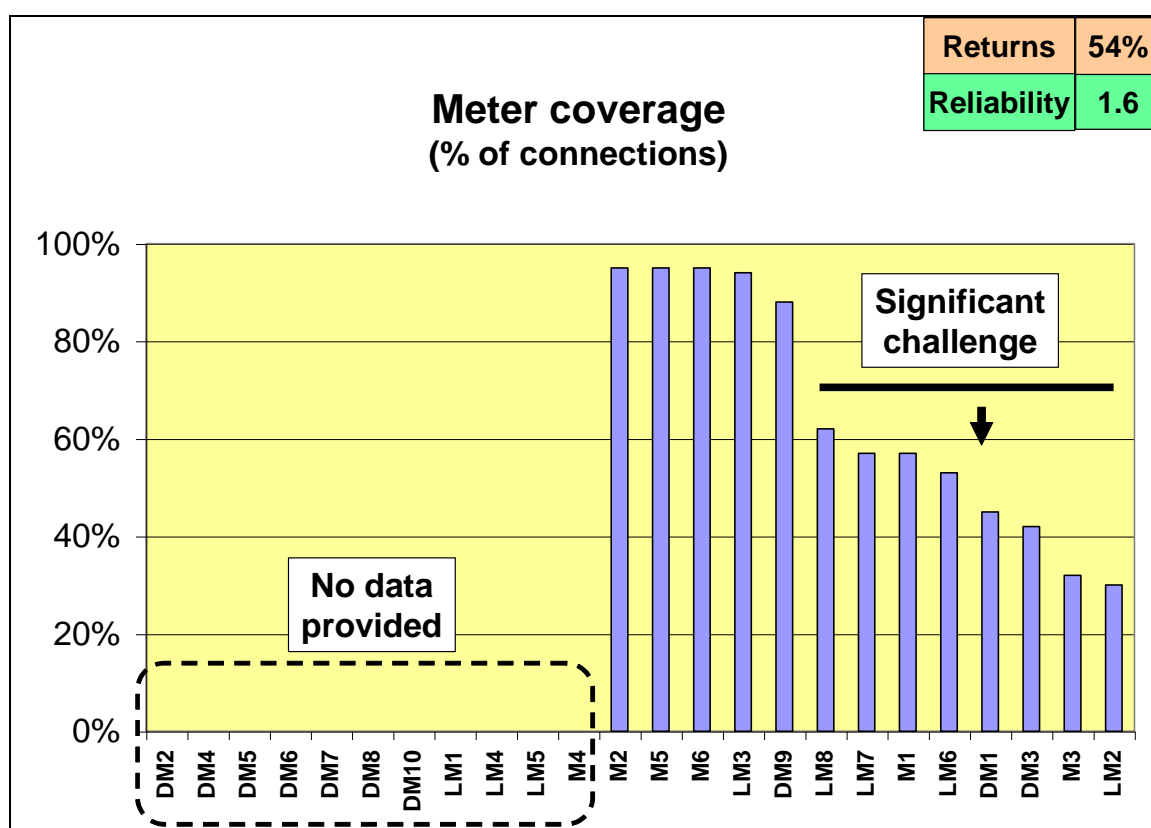


Figure 19: Meter coverage

Many municipalities were not able to provide data on meter coverage. Of those that did, many face a significant challenge to meter all end-use connections which are not volume restricted.

It is important to note that there was probably some inconsistency in the reporting of this indicator. This needs to be improved in the following round.

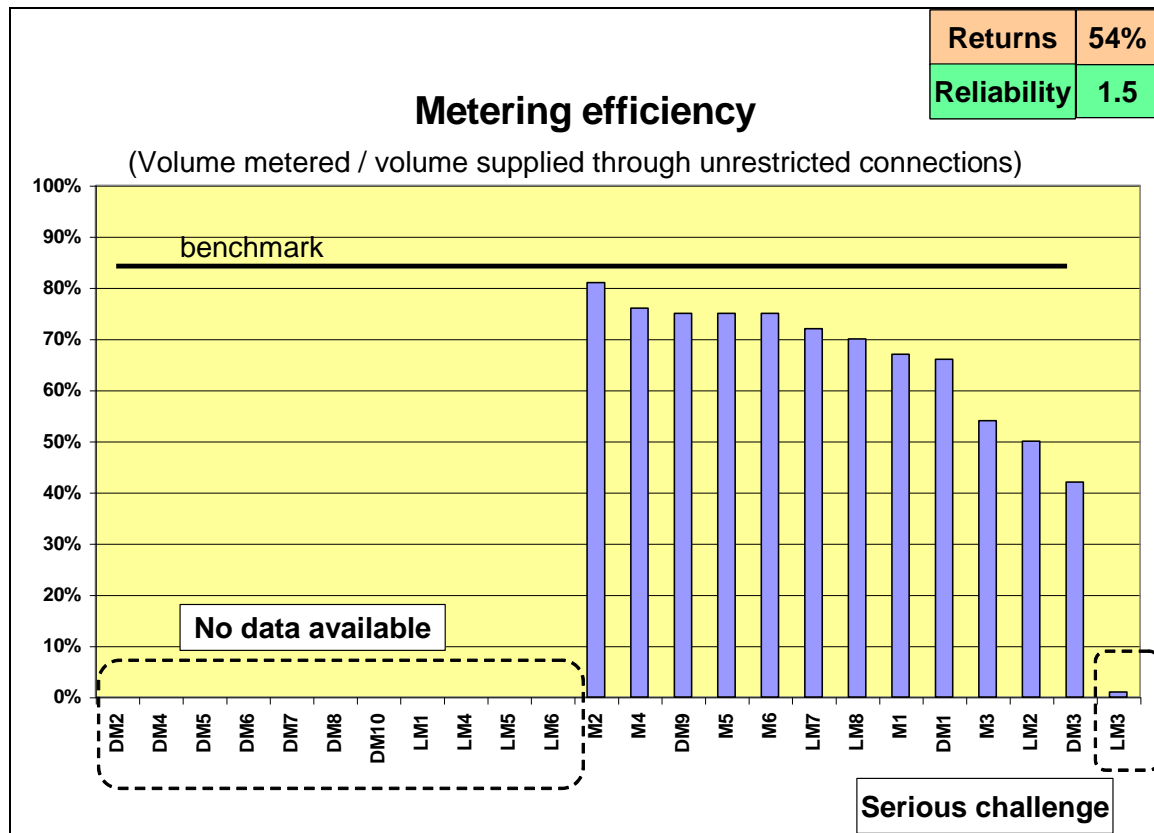


Figure 20: Metering efficiency

Many municipalities were not able to provide data on metering efficiency. Of those that did provide data, many face a significant challenge to increase metering efficiency to the best-practice benchmark of 85%.

It is important to note that there was probably some inconsistency in the reporting of this indicator. This needs to be improved in the following round.

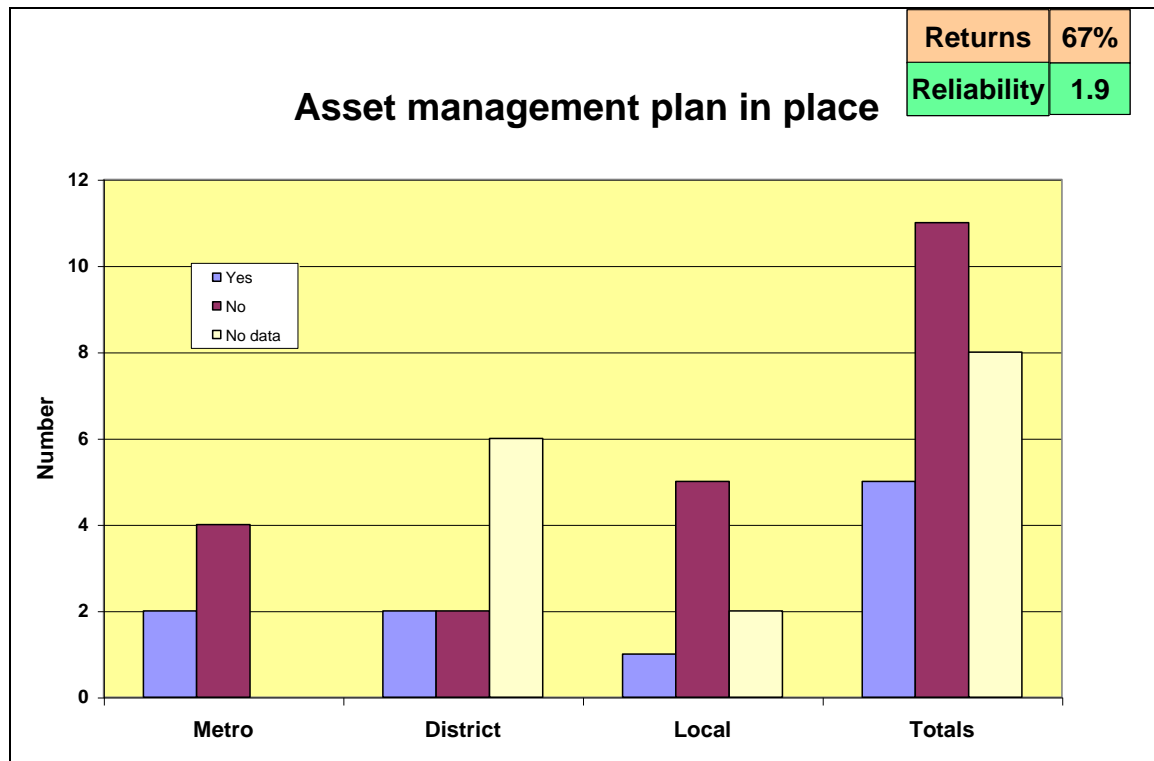


Figure 21: Asset management plan approved by Council

Eight municipalities did not report on the existence on an asset management plan. This may be the result of some uncertainty about what exactly comprises an asset management plan and how this related to the water services development plan (see definitions above). Of the 16 that did report, just 5 indicated that they had an asset management plan that was approved by Council.

The sound management of water services assets is an essential part of the business of managing water services. It is therefore of some concern that so few municipalities have asset management plans in place.

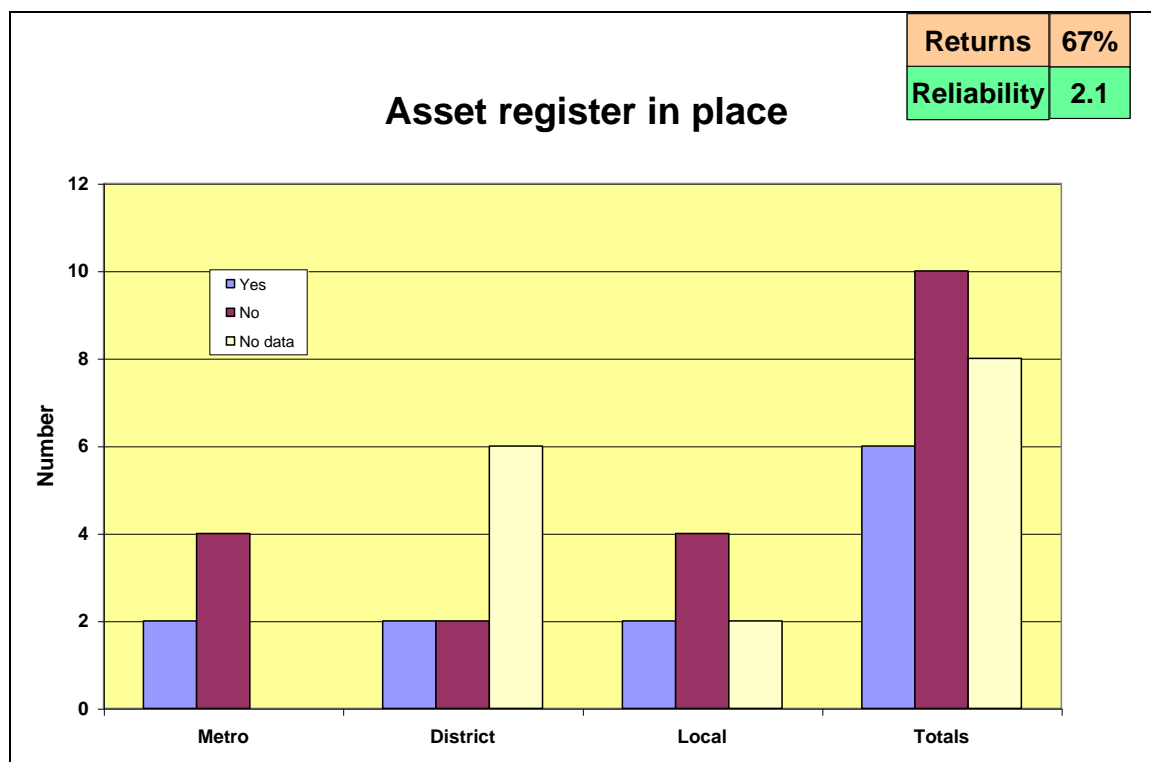


Figure 22: Up-to-date asset register in place

The results are similar (not surprisingly) to those for the asset management plan, with six municipalities indicating that they had an up-to-date asset register. *Having an accurate and up-to-date asset register is an indispensable part of managing a water services business effectively.*

Summary of performance outcomes – asset management

- Municipalities not able to report on extent of metering of the water network: 11 out of 24 municipalities.
- Municipalities with meter coverage greater than 80%: only 5 out of 13.
- All fall below the accepted benchmark for metering efficiency.
- Asset management plan in place: only 5 out of 24 municipalities.
- Up-to-date asset register in place: only 6 out of 24 municipalities.

Implications

There is a need for a great deal of improvement in the way in which municipalities manage water service assets. The first priority is to ensure that all volume-unrestricted connections are metered. The second priority is to increase metering efficiency. (These two goals are related.) With improved knowledge of water use it is then possible to plan effectively for the appropriate maintenance, rehabilitation, replacement and expansion of assets through the development of an asset management plan and by making use of an up-to-date asset register.

3.7 Customer service standards

Definitions

Ref no	Indicator	Definition
6.1 (see note below)	Continuity of water supply – number of households experiencing an interruption of greater than 48 hours.	Number of households that have experienced interruptions of greater than 48 hours or more for a single incident.
6.2	Continuity of water supply – number of interruptions of greater than 6 hours, 24 hours and 48 hours per incident per 1 000 connections.	The number of interruptions of greater than 6 hours, 24 hours and 48 hours per incident per 1 000 connections.

Comments on the definitions

1. The indicator for continuity of supply, number of households experiencing interruptions to water services, has been identified in the draft National Water Services Regulation Strategy as a critical aspirant indicator to be implemented at a later stage. Nevertheless, water services authorities were asked to provide data if they were able to do so.
2. The definition was elaborated as follows: number of interruptions to water and/or sanitation services of greater than 6, 24 and 48 hours for a single incident per 1 000 service connections.

Performance outcomes

The reported data is not considered to be meaningful at this stage as too few were able to report and the base of 1 000 seems inappropriate.

Recommendation: This indicator be revisited during the next round.

Implications

The accurate measurement of customer service standards requires sophisticated management information and reporting systems. Most municipalities do not have these in place. For this reason, it is considered premature to focus on the measurement of these indicators at this stage. Nevertheless, the indicator will be kept on the agenda and reported on when meaningful data becomes available over time.

3.8 Financial performance

Definitions

Ref no	Indicator	Definition
7.1	Water services financial audit	Separate audit of ring-fenced water services finances and the receipt of an unqualified audit report thereon.
7.2	Collection efficiency	The comparison of the amount of revenue (cash) collected from water sales to the amount billed for water sales.
7.3	Debtor days (water)	The total outstanding debt for water, less provisions for bad debt, divided by annual revenue from the sale of revenue, expressed in days.

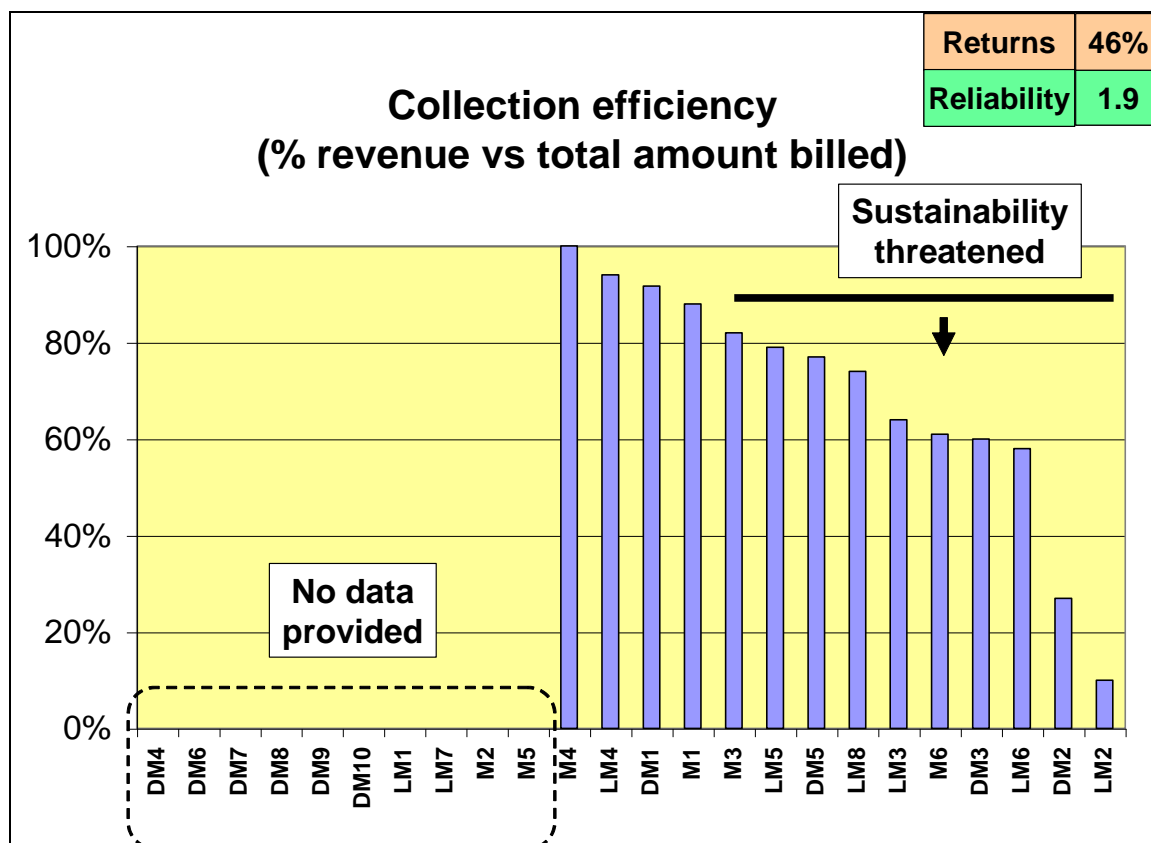
7.4	Financial self-reliance	Ratio of income from water sales and user charges to total operating expenditure on water and sanitation services (including interest charges and depreciation).
7.5	Average domestic tariff	A measure of average water services user charges, including fixed charges for a normal (non-indigent) domestic consumer at 10kl per month and 30kl per month.

Comments on the definitions

1. The definition of what constitutes a ring-fenced set of water services accounts needs to be better specified.
2. The use of the term revenue in the collection efficiency definition is confusing. It should refer to cash collected (not revenue collected).

Performance outcomes - finance

- Only 6 out of 24 municipalities reported having ring-fenced water services accounts.
- Only 3 out of 24 municipalities reported having a separate independent audit of their water services accounts.



10 out of 24 did not report on collection efficiency. Of the 14 that did, many reported levels which are alarmingly low and which pose a significant threat on the sustainability of the service.

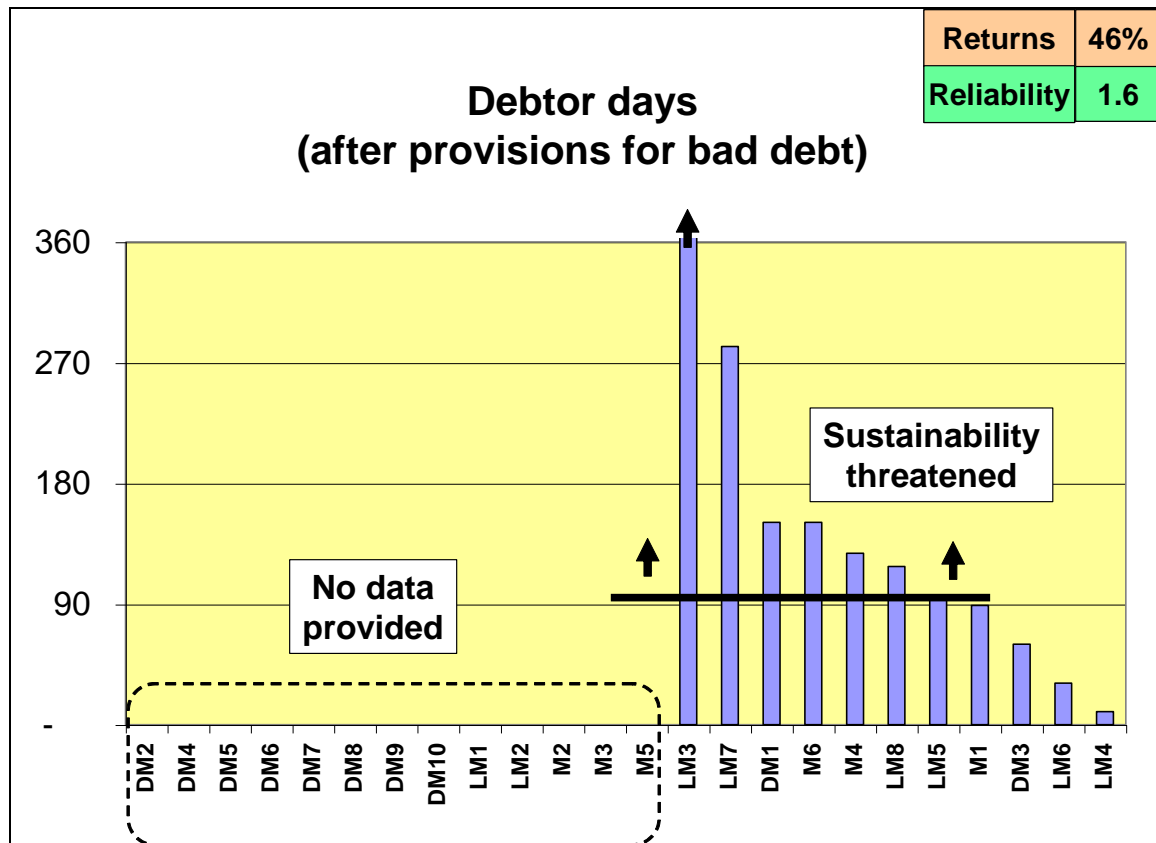


Figure 23: Debtor days for water (or for water and sanitation where only this available)

Only 11 out of 24 reported on debtor days. Debtor days after provisions for bad debt should be less than 90 days. Most of the municipalities that reported on debtor days (after provisions for bad debt) well in excess of 90 days.

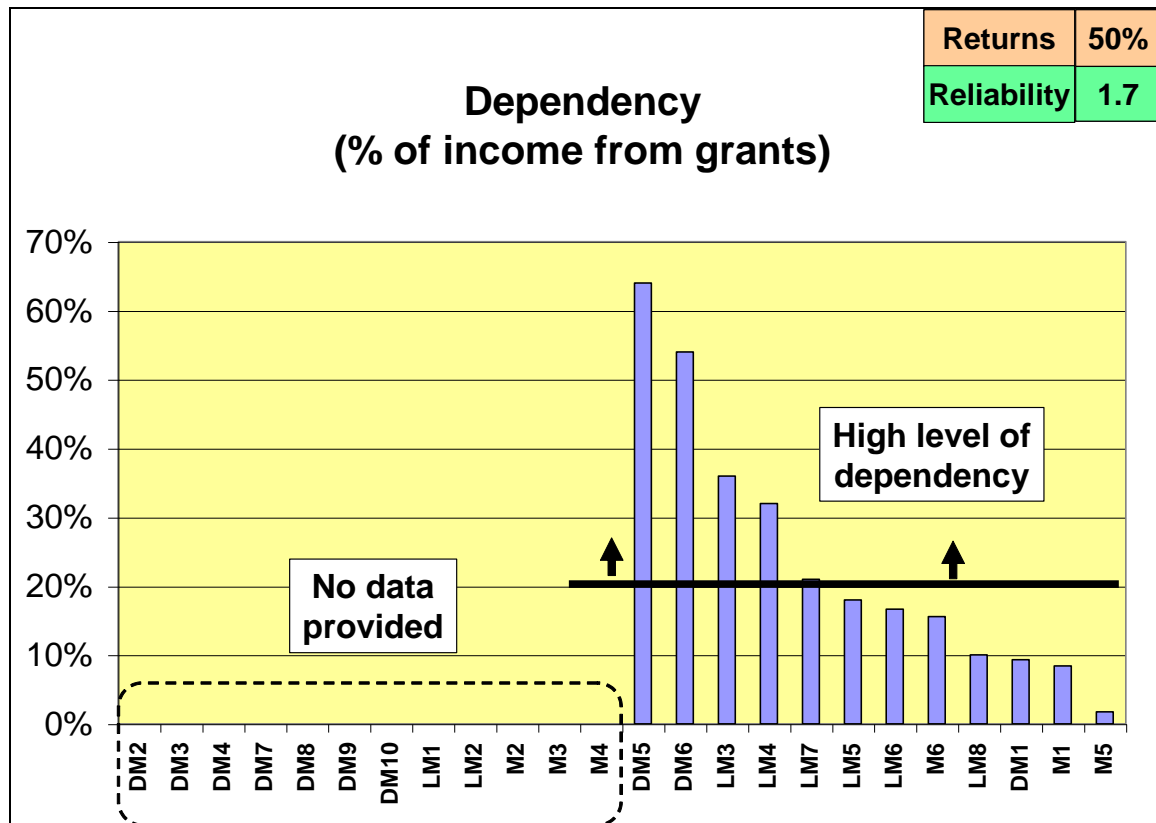


Figure 24: Extent of dependency on grants

Some municipalities have a very high dependency on operating grants to cover their operating expenses.

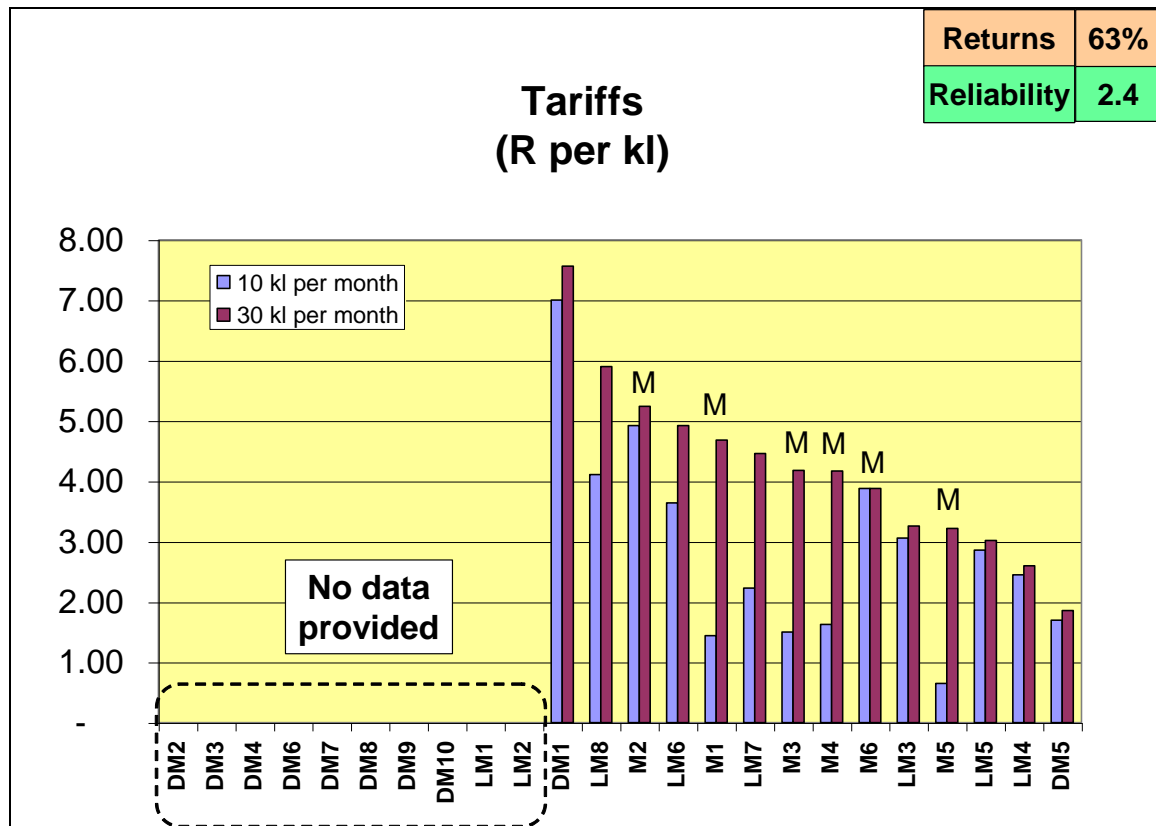


Figure 25: Retail water tariffs for normal domestic consumers

There is a wide range of tariffs for domestic consumers. This can be expected given the diversity of supply conditions across the country. Of more significance is the different ratio between the tariff for 10 kl per month compared to the tariff for 30 kl per month, particularly between the metropolitan areas.

Also of significance will be the trends in tariffs over time. This will only become known as the benchmarking process progresses.

These tariffs need to be understood in relation to the structure of the full cost of water supply and sanitation services and the related tariffs and charges as shown in Figure 26 (source: Strategic Framework for Water Services).

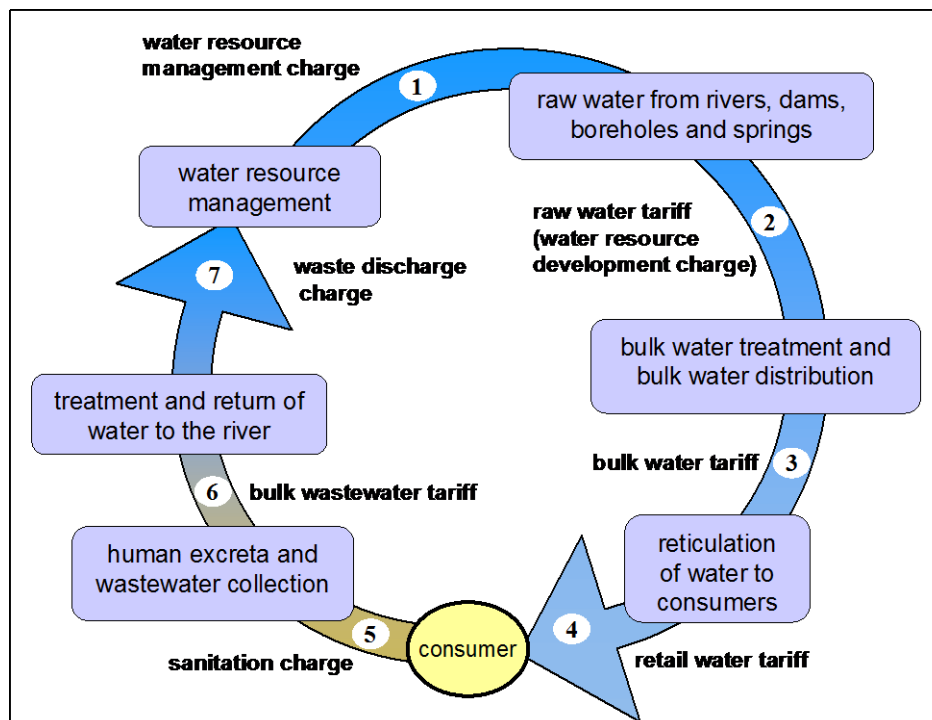


Figure 26: Water cost and pricing chain

Most municipalities have control of only the retail water and sanitation tariffs. This typically makes up only 50% of the total cost of water supply. Some municipalities also control the bulk water and/or wastewater tariffs.

Summary of performance outcomes – finance

- Ten out of 24 municipalities were not able to report on collection efficiency.
- Only 3 out of 24 had a collection efficiency exceeding 90%.
- The poor collection rates reported are a very significant threat to the sustainability of the sector.
- Six out of 11 had debtor days exceeding 90 days (after provisions for bad debt).
- Four out of 11 are highly dependent on external grants (more than 30% of income).
- There is a very significant range in tariffs (R2.50 to R7.50) which could arise from a range of institutional, physical and other factors.

Implications

The level of financial performance reported should be of grave concern. Unless there are significant improvements in this performance, the sustainability of water services infrastructure will become more and more dependent on central government grants. This is not a healthy situation. International experience suggests that the long-term sustainability and good performance of water services is best served where water services providers are able to reduce their dependence on external grants over time and become more accountable to the local users of the service.

3.9 Institutional performance

Definitions

Ref no	Indicator	Definition
8.1	Number of employees per 1 000 connections	Number of employees employed by the water services authority in the execution of the water and sanitation services business per 1 000 water service connections.
8.2	Water services authority annual report submitted to Minister	Water services authority annual report as required by the Water Services Act submitted to the Minister of Water and Forestry.

Comments on the definitions

1. There was some uncertainty as to what constituted a water connection. This needs to be more clearly defined in the following round.
2. There was some uncertainty as to the requirement of an annual report. (The Water Services Act states that a water services authority must report annually to the Minister on performance against the water services development plan.)

Performance outcomes – institutional

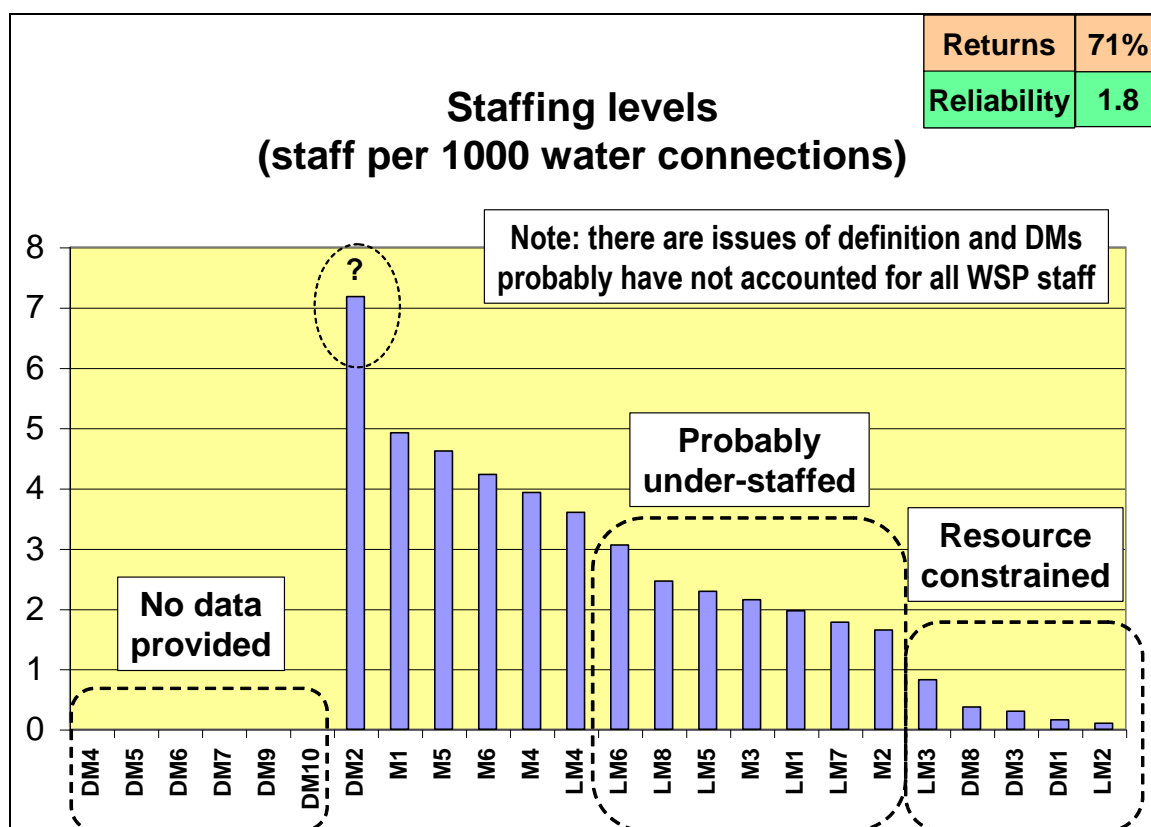


Figure 27: Staffing levels per 1 000 water connections

Six out of 24 municipalities did not report on staff levels. A very wide range in staffing levels was reported (from 0.1 to 7 per 1 000 connections, a factor of 70 times).

More detailed investigations would be necessary to identify the optimal staffing levels for each municipality.

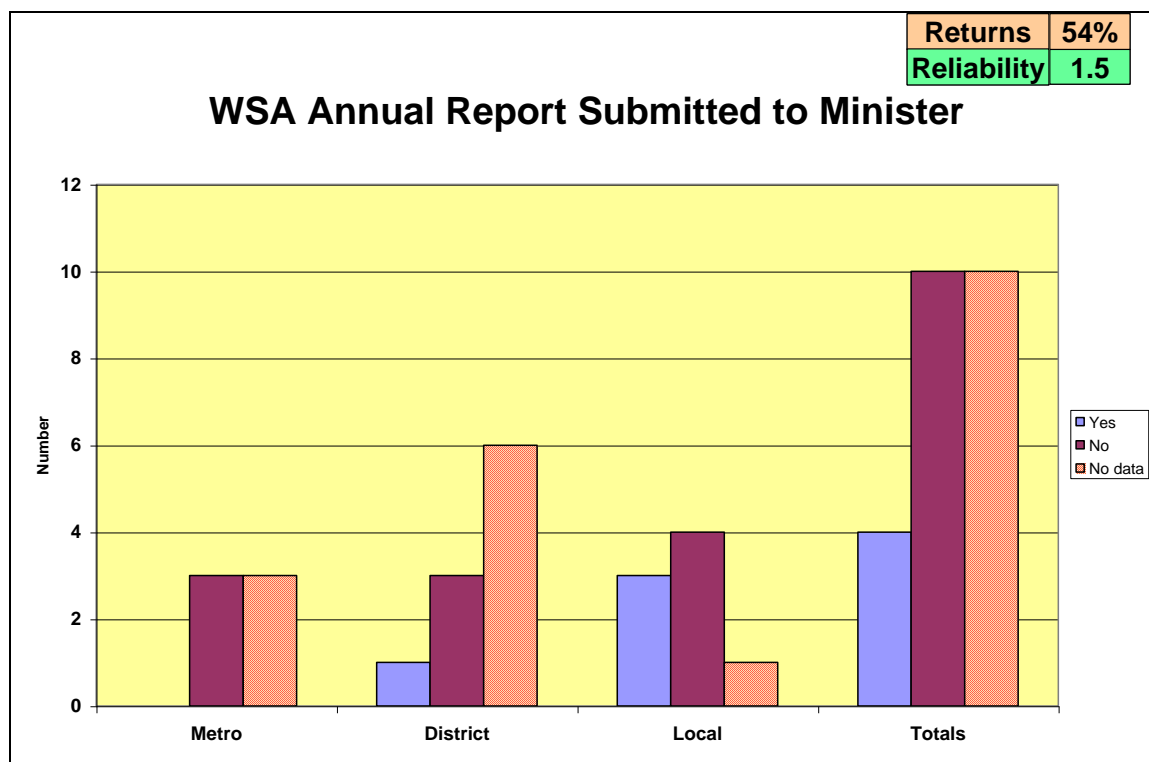


Figure 28: Submission of annual report to the Minister

Four out of 24 indicated that they had submitted an annual report to the Minister, but no copies of these reports were provided. Ten did not respond, which probably reflects some confusion as to what was expected.

Summary of performance outcomes – institutional

- There is a wide range in the levels of capacity across municipalities.
- It is probably fair to conclude that most municipalities do not have adequate capacity to provide the required services at the required minimum standard.
- Annual reporting requirements need to be better specified, and the reporting burden reduced to match the capacity to report meaningfully on performance.

Recommendation: DWA should clarify what reporting is required of municipalities on performance. This reporting requirement should take into account the limited capacity of municipalities and focus only on the essentials. It is recommended that the reporting be based primarily on the key performance areas and a limited set of high-level indicators set out in the Strategic Framework for Water Services and in the draft National Water Services Regulation Strategy.

4 Performance outcomes – urban-related indicators

4.1 Introduction

A group of nine municipalities forming part of the South African Cities Network and constituted as the City Water Managers Forum have undertaken a benchmarking initiative for the last three years. The additional indicators benchmarked by this Forum are reported on in this section. This initiative has been merged with the National Benchmarking Initiative.

4.2 Process and choice of indicators

It is worth noting some features of significance from this earlier initiative, now merged with the National Benchmarking Initiative:

- The indicators are selected by the senior water services managers themselves.
- The outcomes of the benchmarking are presented directly to the senior water service managers in a forum comprising just these managers.
- The outcomes are used as a springboard to identify best practices and challenges.
- The Forum provides a network through which to share best practices and a means of support in facing similar challenges.
- The indicators change over time to meet the needs of the managers.
- The choice of indicators reflects the characteristics and needs of the water services providers benchmarked, that is, large urban water and sewer networks.
- The process is starting to enjoy the benefits of time – it is now possible to identify trends over the three year period.
- The process has the benefit of the strong buy-in of the senior water services managers.
- The group has recognised that a lot of attention had to be paid to definitions.
- The group has recognised the benefits of having a central professional person to manage the process and to ensure consistency.

4.3 Institutional context – large urban networks

Five of the 9 members of the City Water Managers Forum can be classed as major urban utilities.

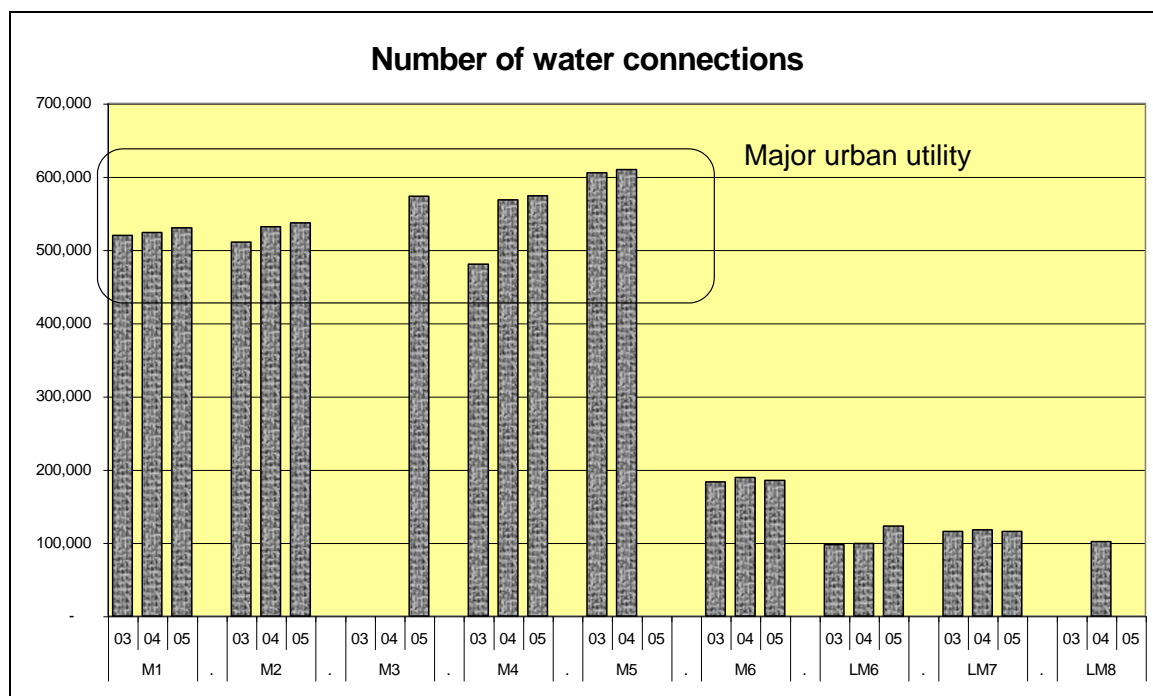


Figure 29: Number of water connections

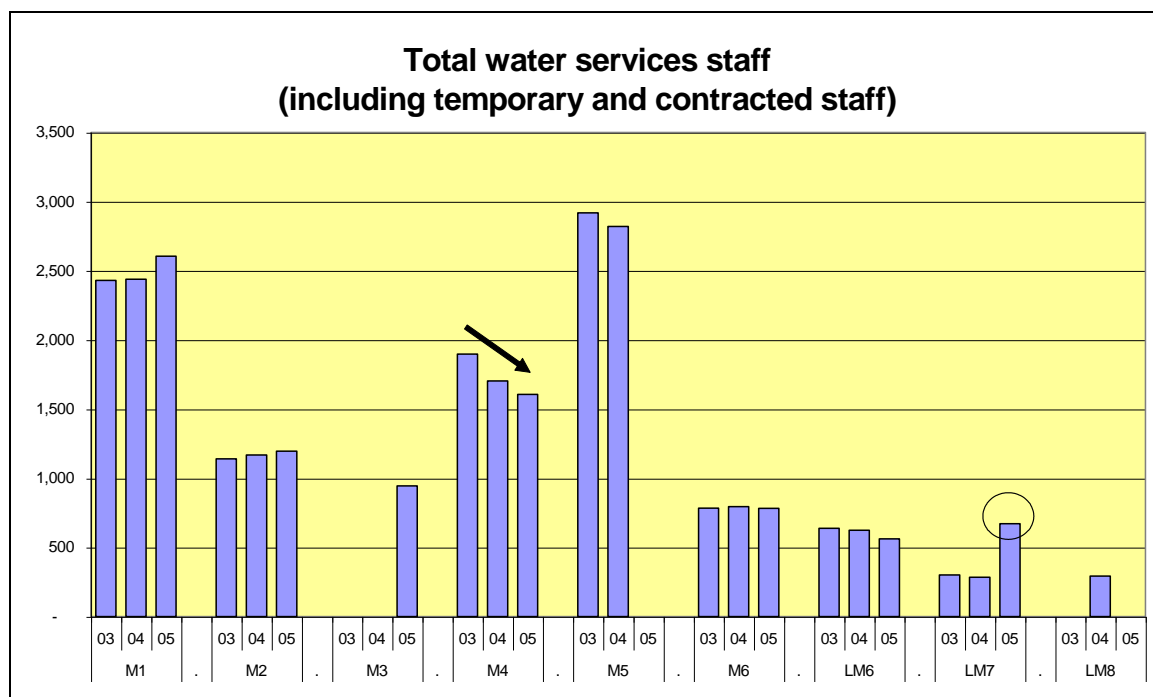


Figure 30: Total water services staff

Staff complements differ significantly between municipalities and have also changed significantly over time, as a result of restructuring. Some of the differences arise from differences in how support services are provided and the extent of out-sourcing. The full reasons and implications of these differences need to be better understood before any conclusions can be drawn.

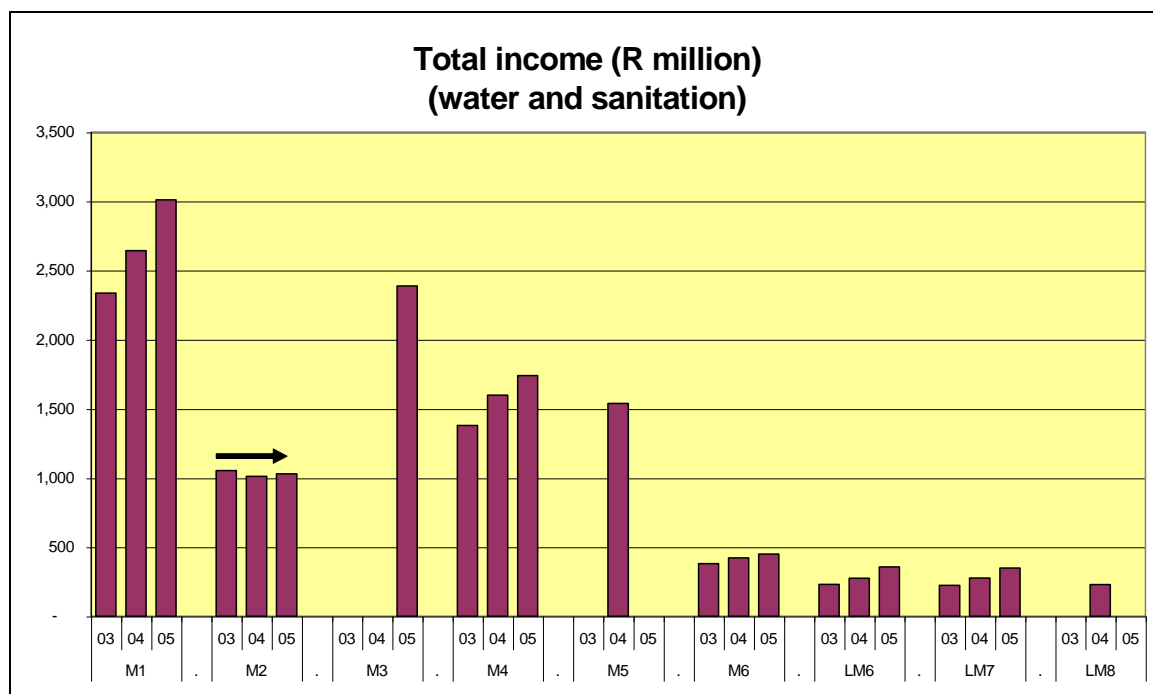


Figure 31: Total income

The differences in the absolute total income and in the trends in income are significant. Compare, for example the significant increases in income in M1 and M4 compared to the flat income trajectory of M2. The size of the business (in terms of income) is more than five times bigger in M1 compared to M6.

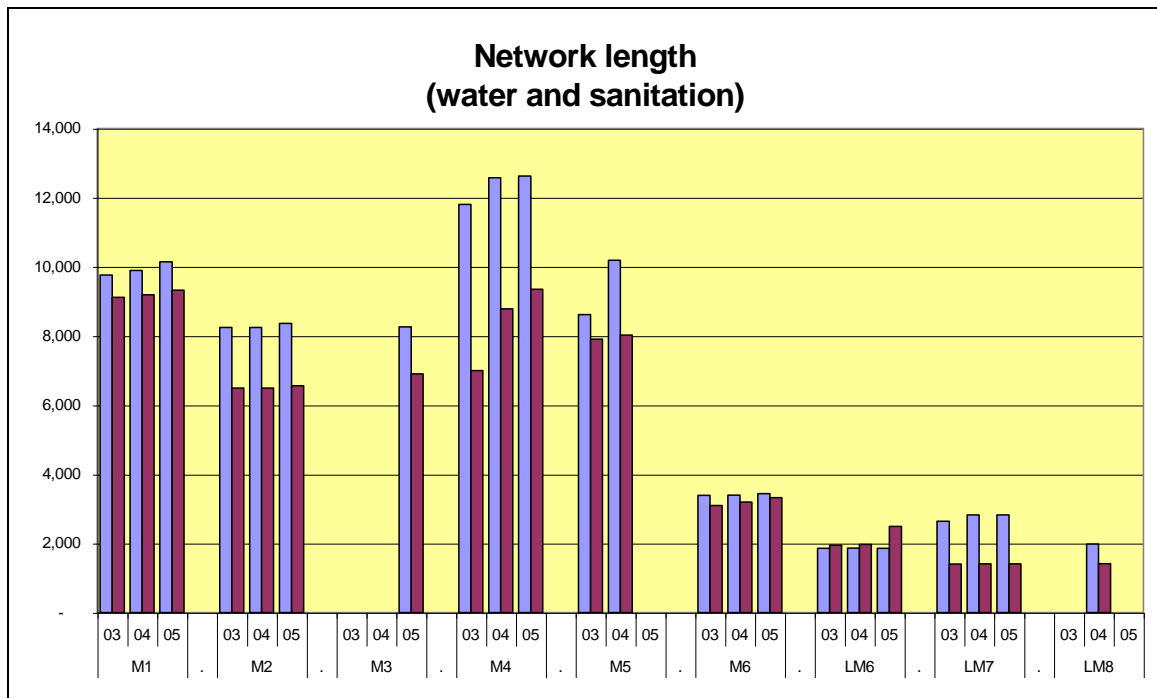


Figure 32: Network length

The relative relationships between the water and sewer network lengths in each city are worth noting. M4, for example, has a much longer water reticulation network. This relates to the large peri-urban area supplied with water but without a waterborne sanitation service. In M6, the service policy is to provide only full waterborne services and hence there is a close correlation between the water and sewer reticulation lengths.

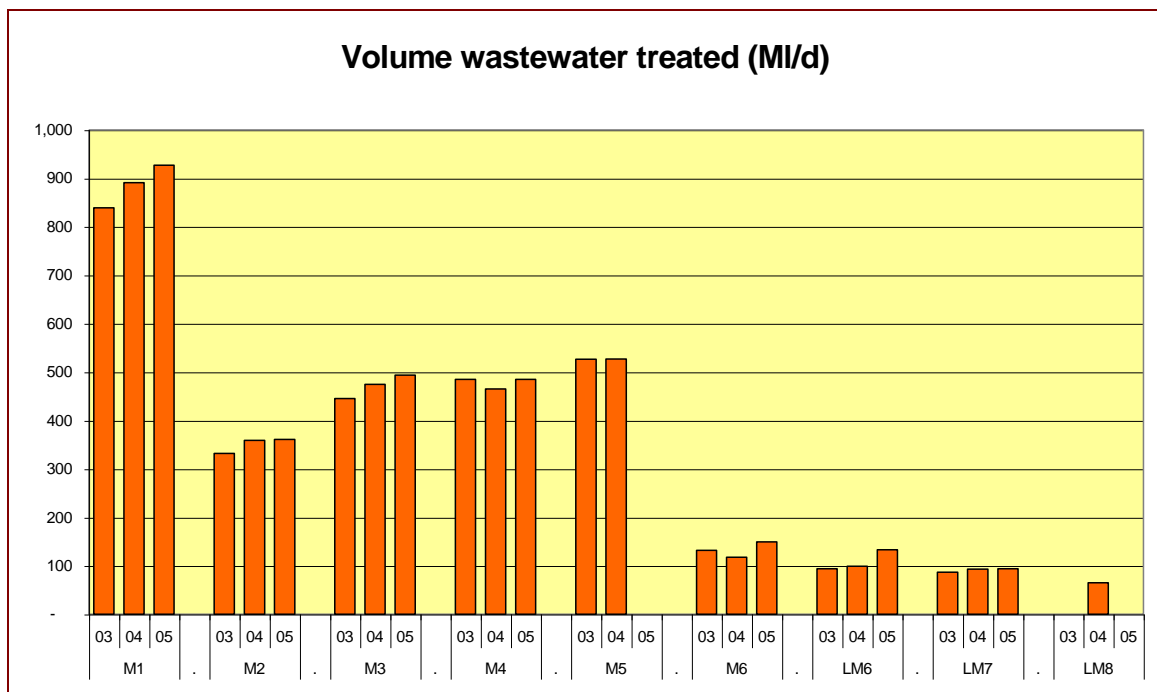


Figure 33: Volume of wastewater treated

The flat trend in the volume of wastewater treated in M4 is noticeable compared to increases in the other metropolitan municipalities (data from M5 needs to be verified).

4.4 Performance outcomes with historic trends

Financial performance

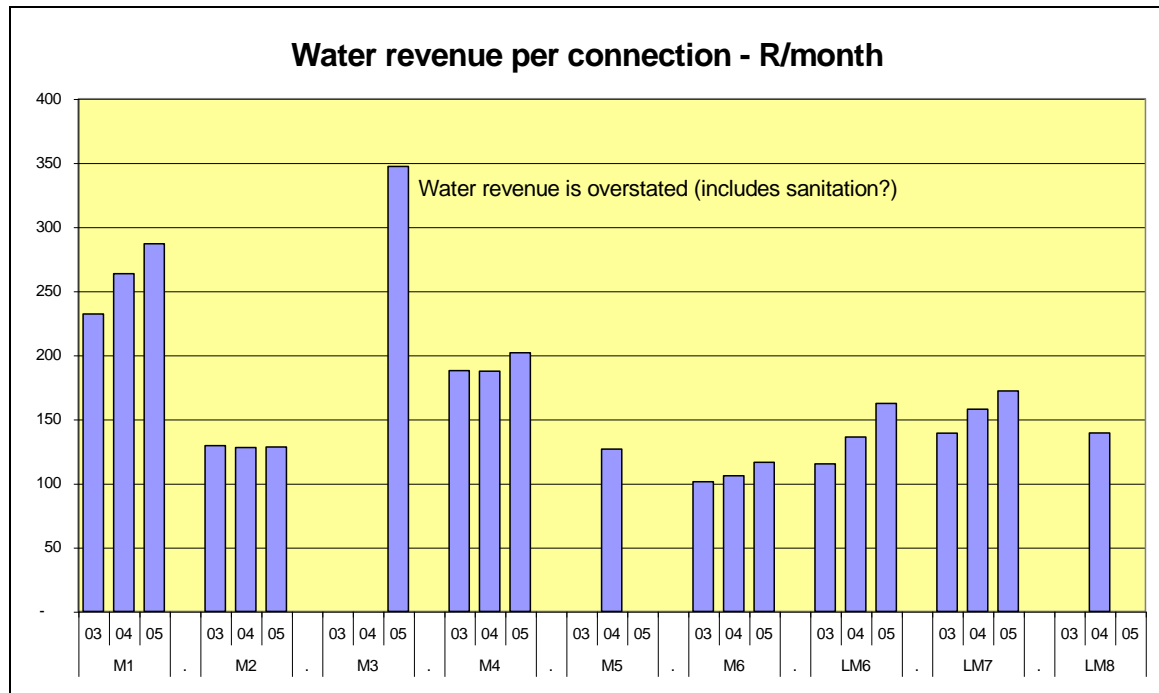


Figure 34: Water revenue per connection

The flat trend in revenue for M2 is noticeable compared to the other cities. The data for M3 appears to be an anomaly.

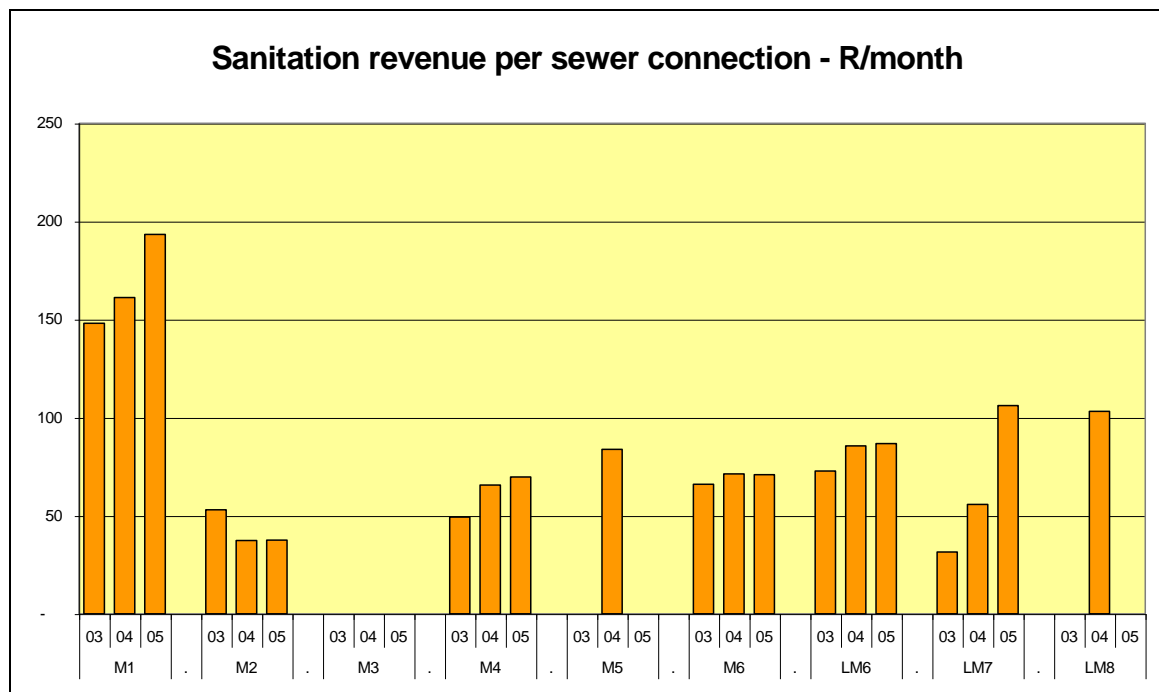


Figure 35: Sanitation revenue per connection

The flat trends for M2, M6 and LM6 are noticeable.

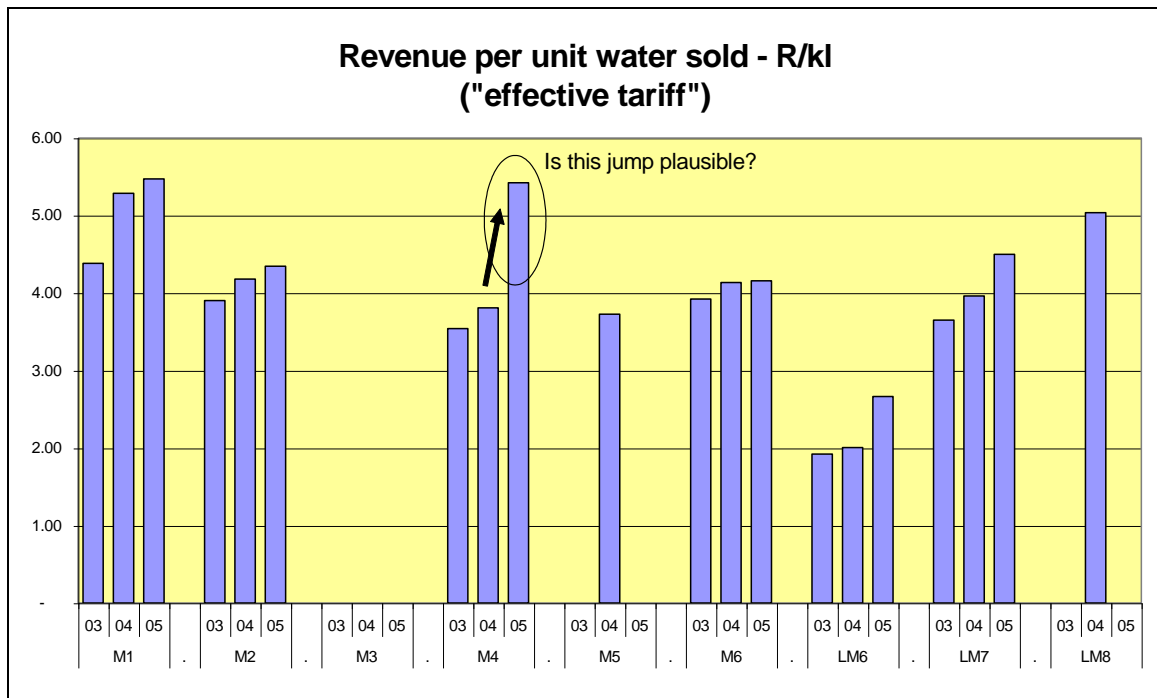


Figure 36: Water revenue per unit water sold

The increase in M4 requires verification. The low effective average tariff for LM6 is striking.

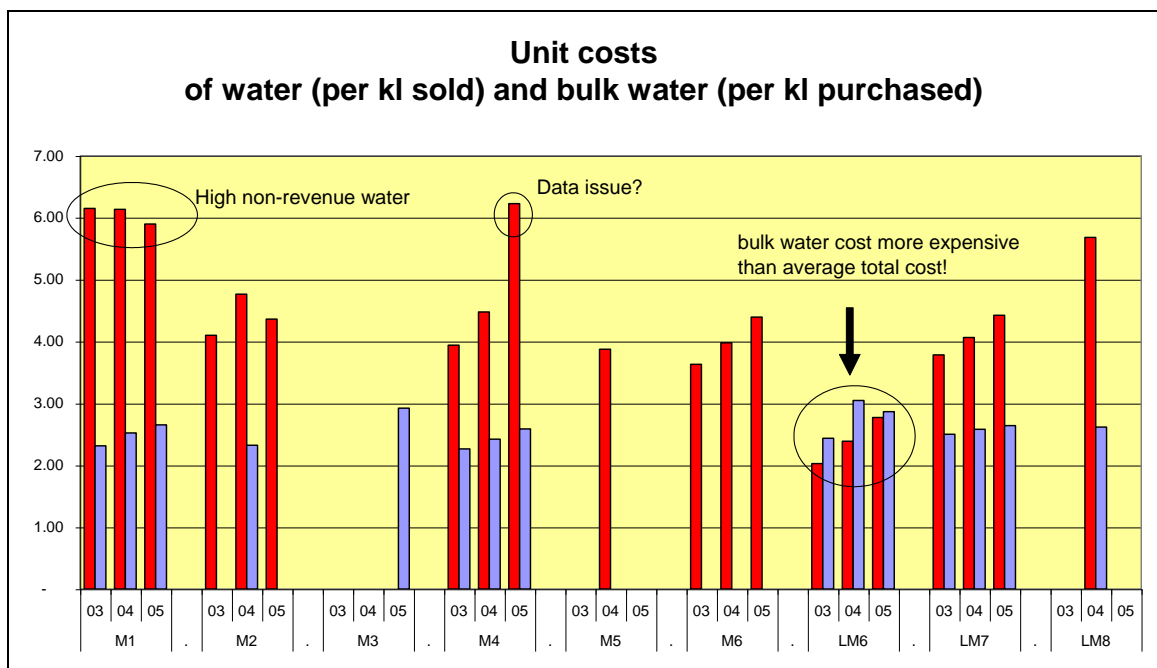


Figure 37: Unit costs of water

In the case of LM6, not all bulk water is purchased, but the component that is purchased exceeds the average total cost.

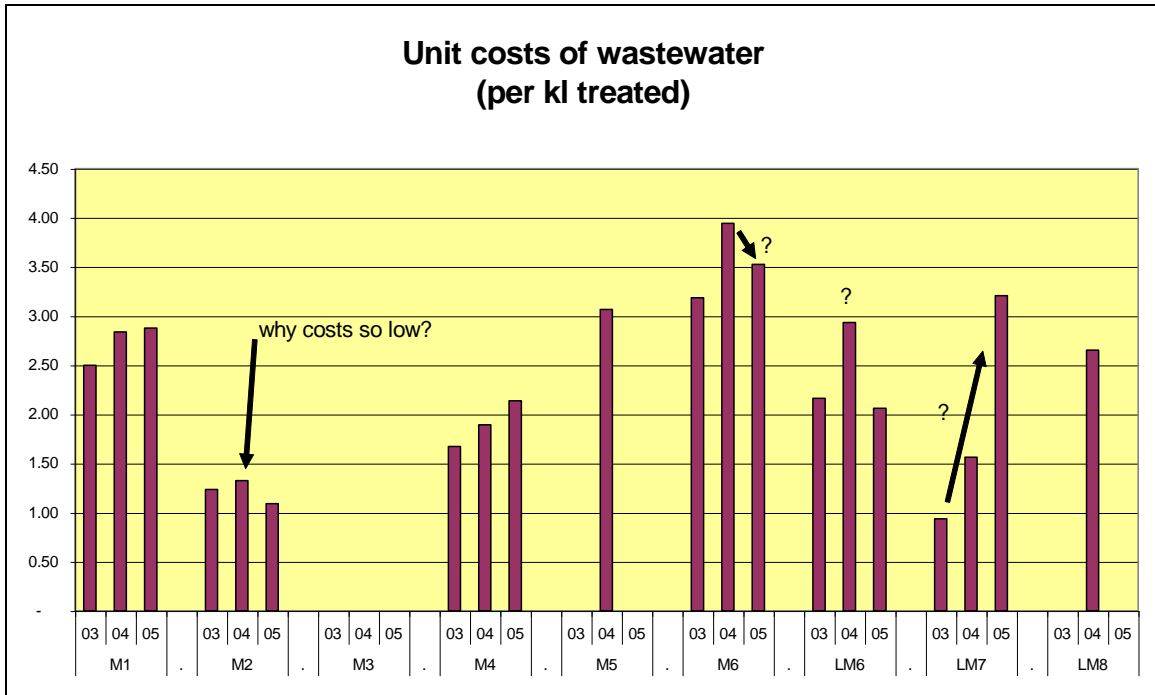


Figure 38: Unit costs per kl wastewater treated

There appear to be some anomalies here which need to be checked and verified.

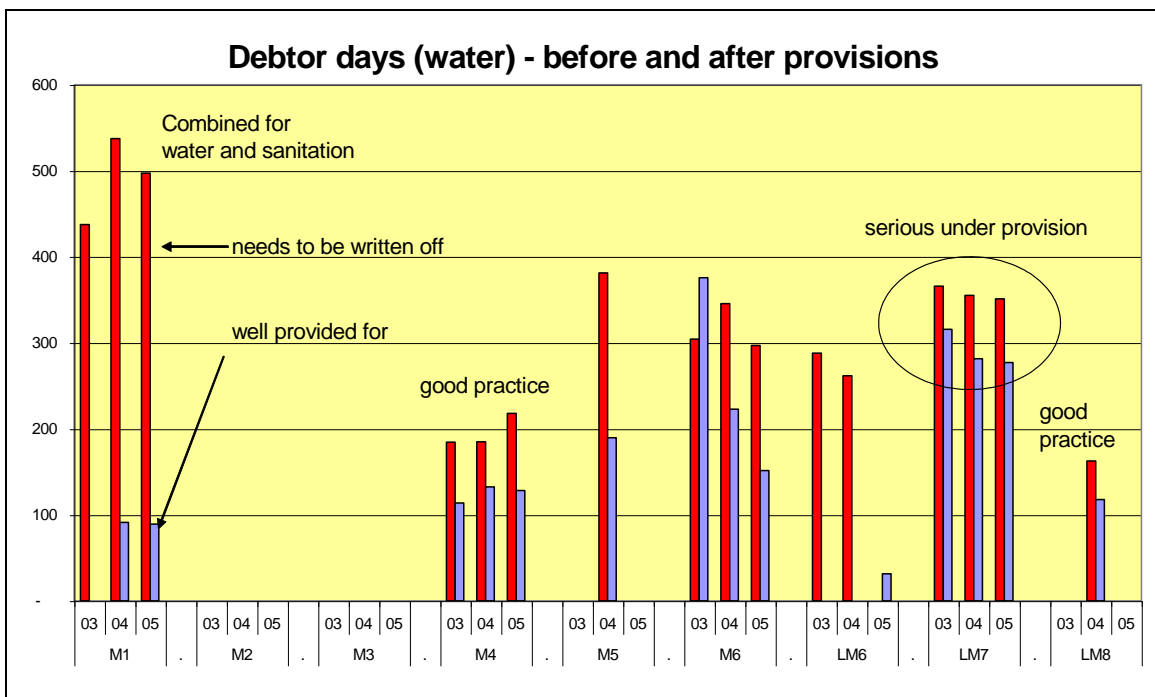


Figure 39: Debtor days for water after provisions

There are striking differences in practice and performance between these cities. M4 and LM8 provide models of good practice for others to emulate. LM7 has a very serious case of under provision for bad debt. M6 has made good strides in providing for bad debt. M1 had provided adequately for bad debt but the old bad debt should be written off.

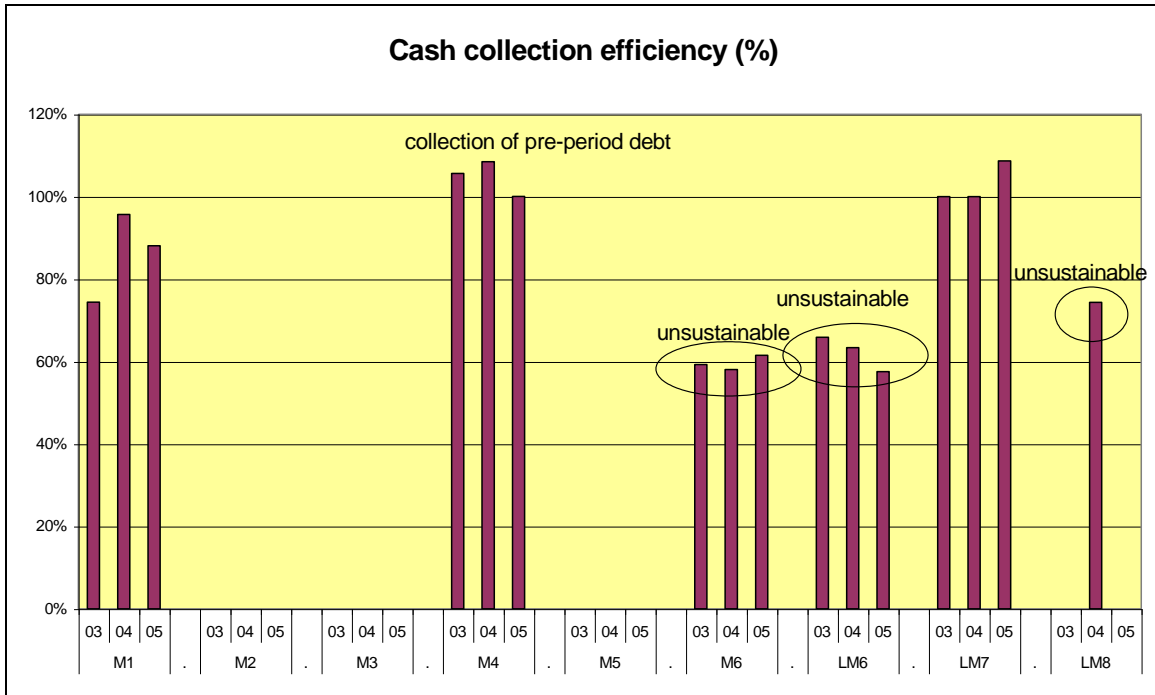


Figure 40: Cash collection efficiency

The definition includes cash collected for previous years, therefore it is possible to have a collection efficiency of over 100%. Both M4 and LM7 are making progress in recovering old debt. Cash collection rates in M6, LM6 and LM8 are, if true, wholly unsustainable.

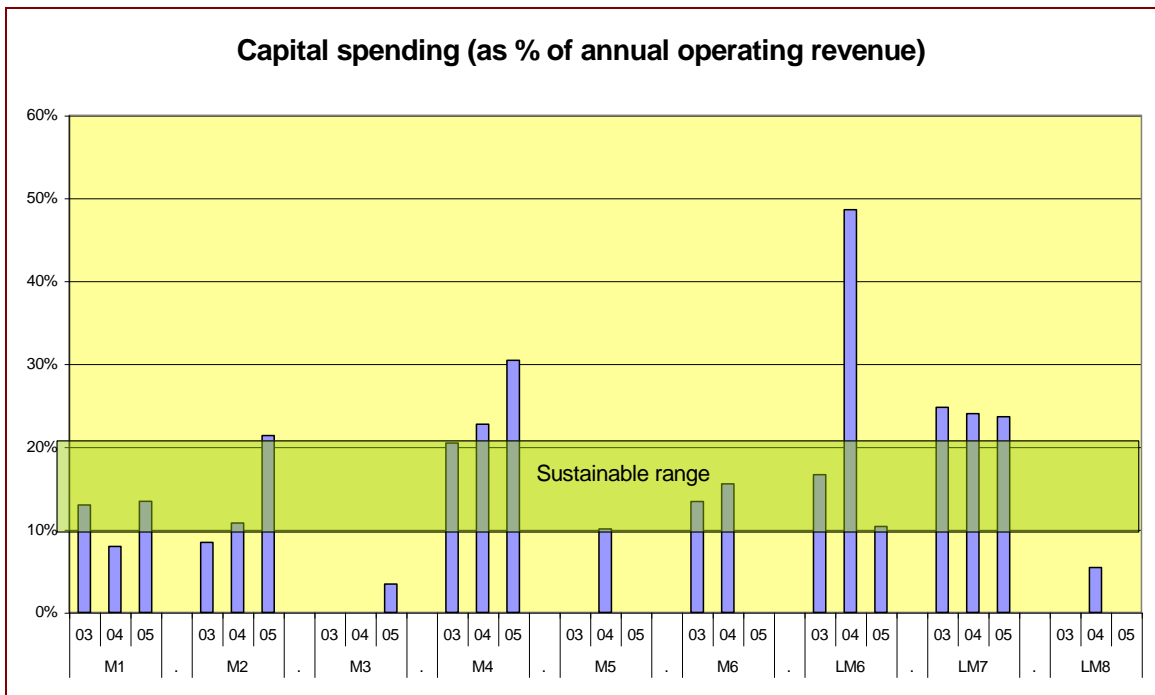


Figure 41: Level of capital spending

M3 and LM8 are investing too little. M4 and LM7 are investing heavily which is related to elimination of the services backlog. This level of capital investment is not sustainable in the long term.

Operational performance - water

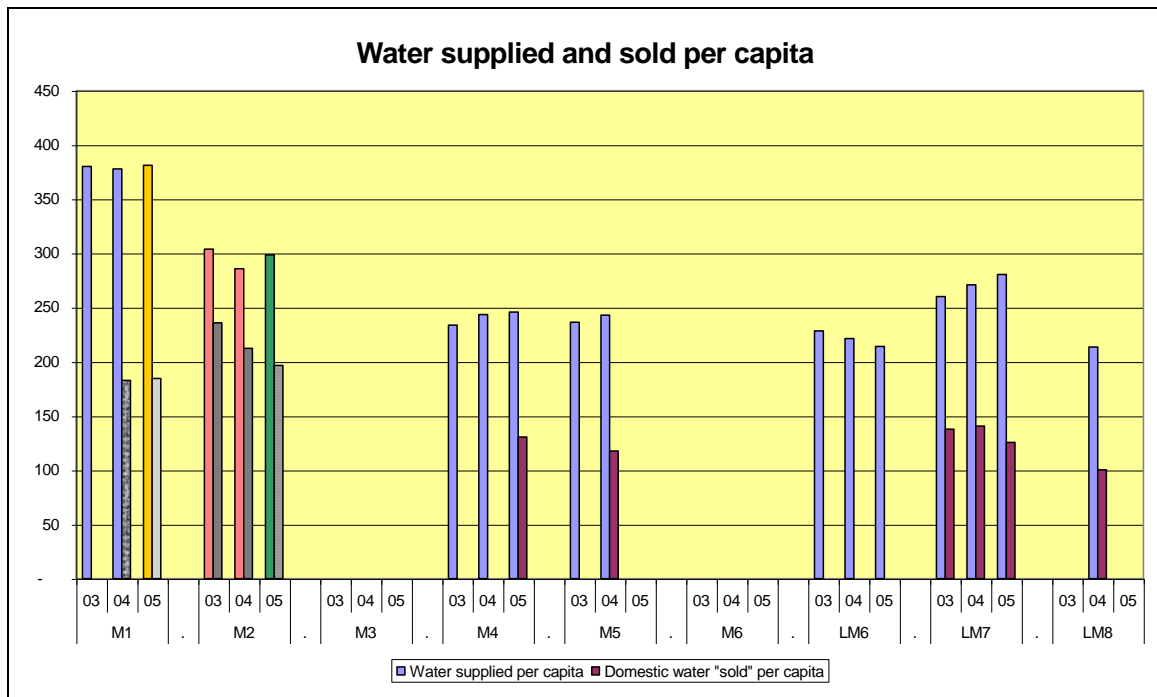


Figure 42: Water supplied and sold per capita

These indicators are dependent on the reliability of the population data. Differences in relative levels as well as differences in trends are noticeable. The downward trend in domestic water sold per capital in M2 is striking, as is the downward trend in LM6.

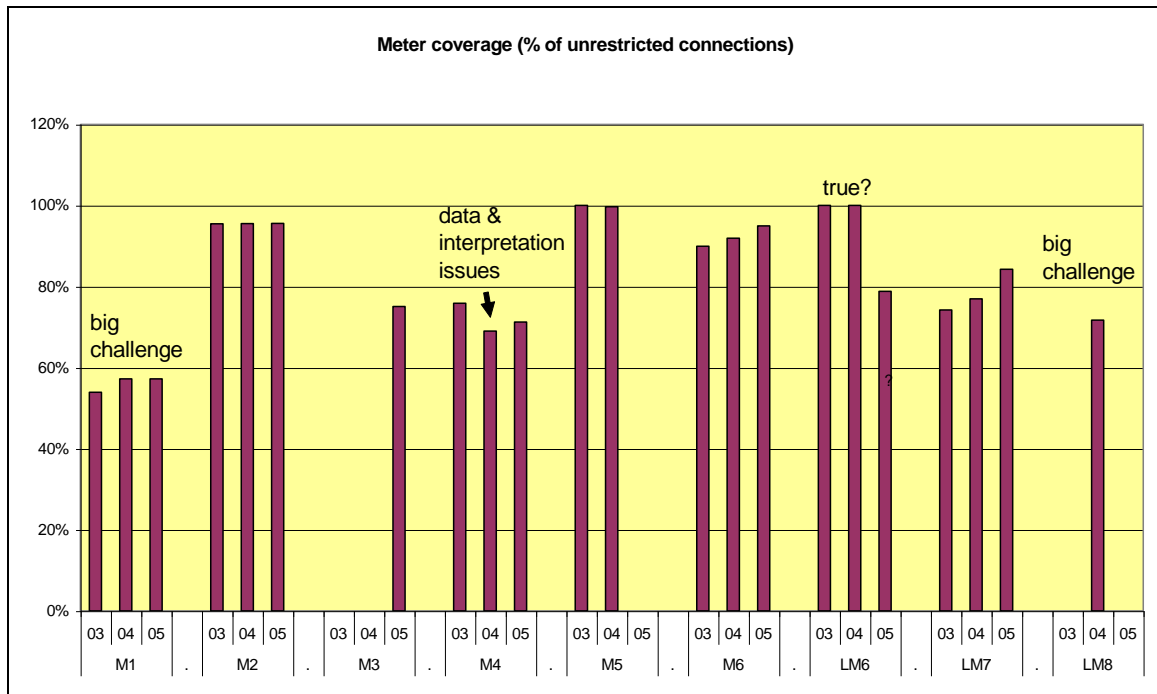


Figure 43: Meter coverage

M1 has a particular challenge with respect to meter coverage. M6 and LM7 have made good progress. There are data and interpretation issues for M4. The 100% indicated for M5 and LM6 needs to be verified.

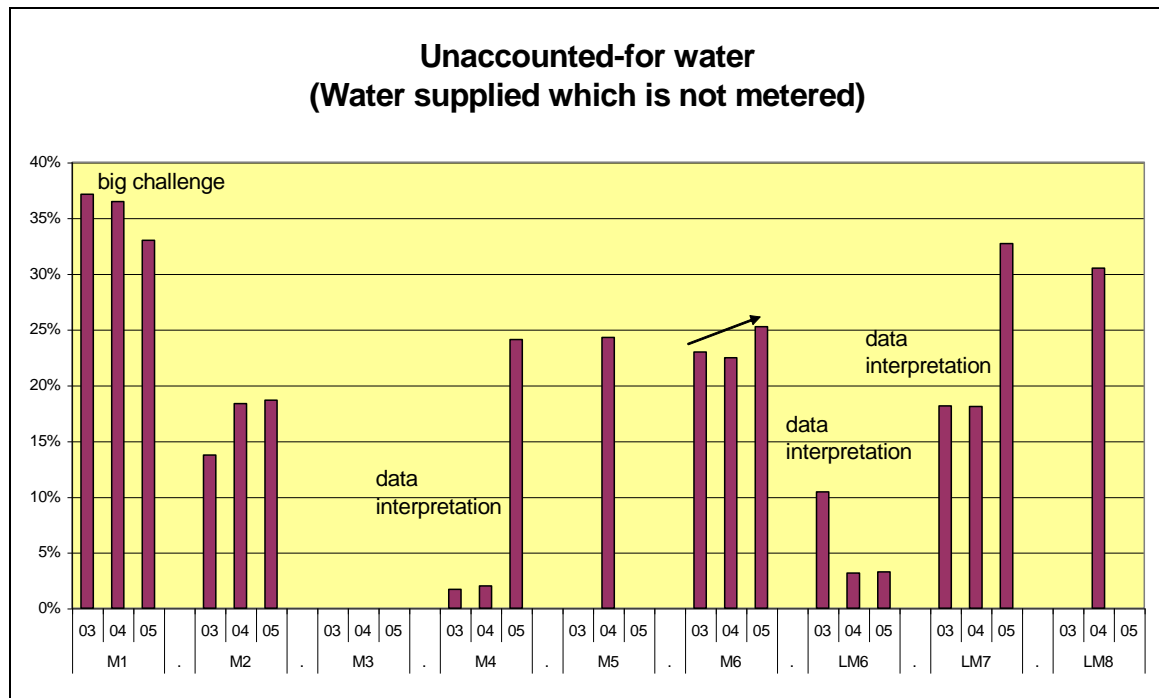


Figure 44: Unaccounted-for water

M1 faces a significant challenge to reduce “unaccounted-for” (non-metered) water. There are some data interpretation issues to be addressed and more attention needs to be given to the methodology for calculating unaccounted-for water. The intention is to adopt the IWA standard and methodology.

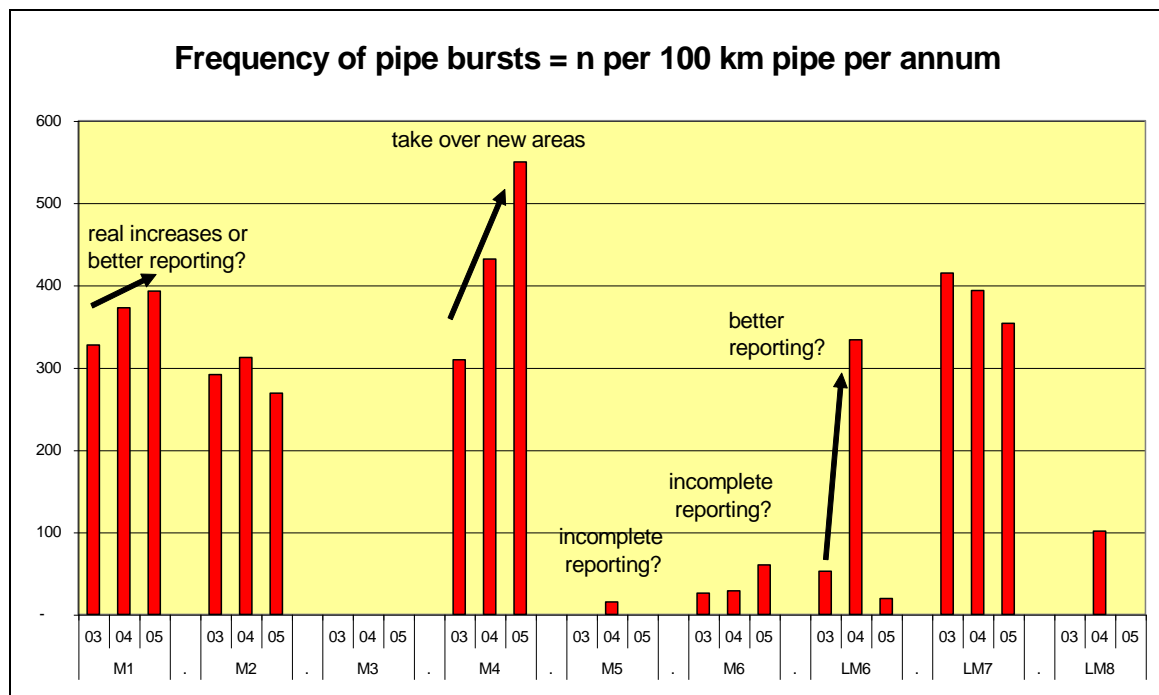


Figure 45: Frequency of pipe bursts

It is important for managers to monitor trends and to manage the network actively so as to optimise pipe replacements.

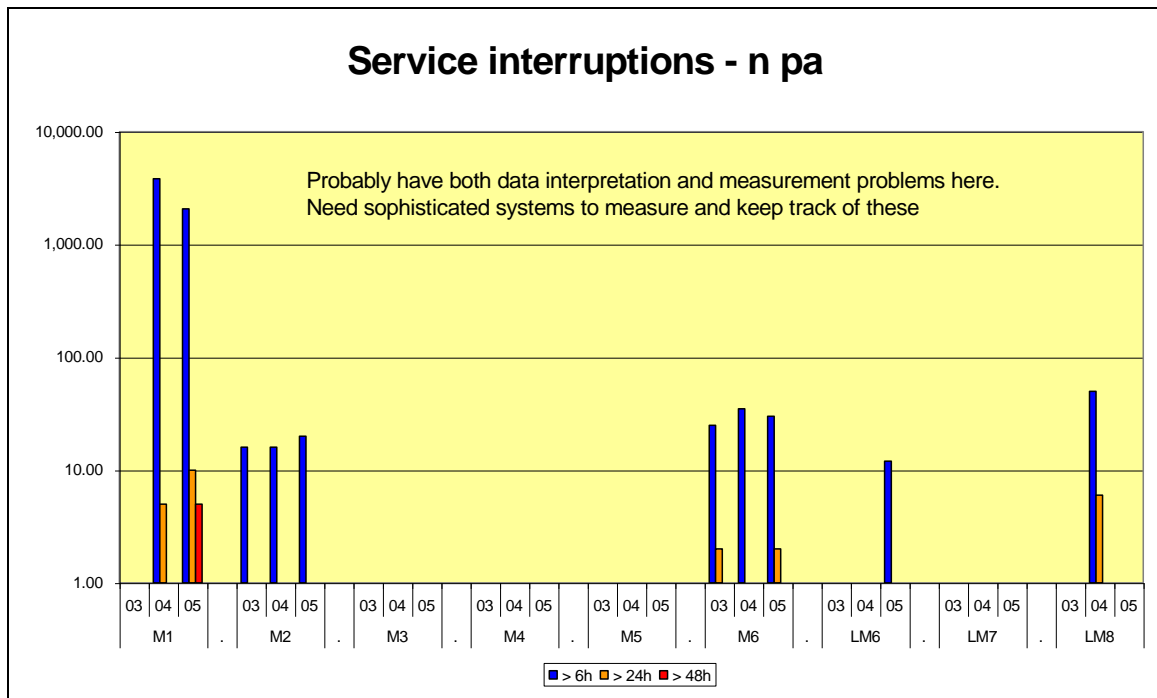


Figure 46: Service interruptions

Data on this indicator is not readily available even for the largest city water networks in South Africa.

Operational performance - wastewater

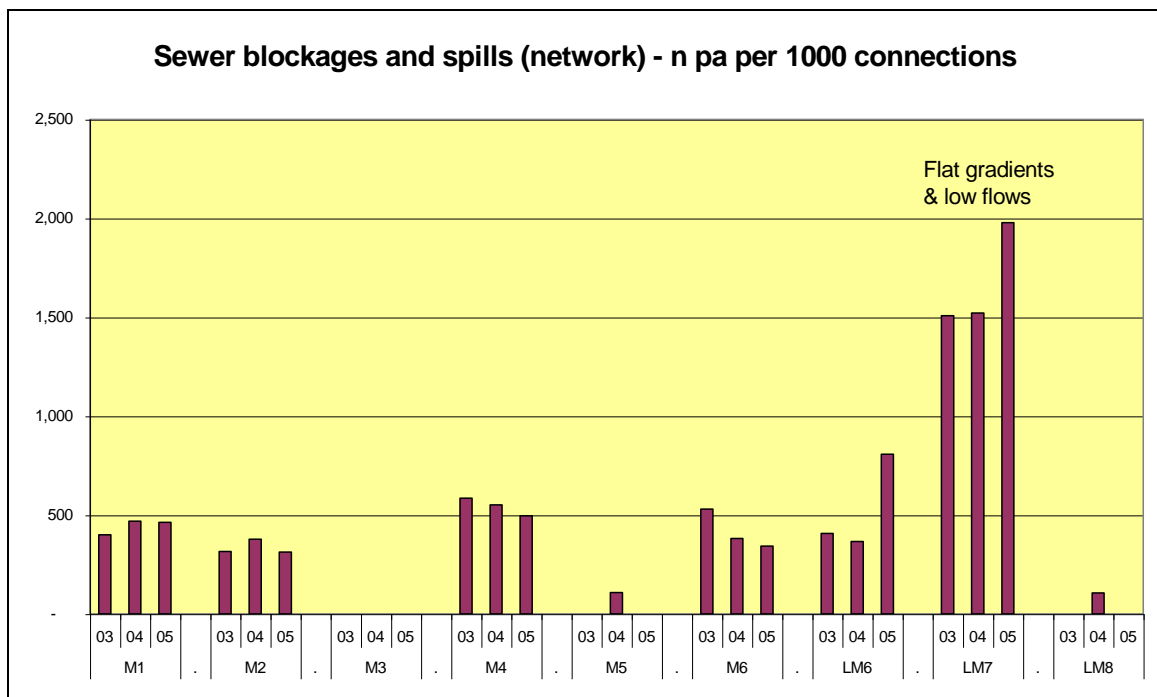


Figure 47: Sewer blockages and spills

LM7 experiences much higher rates of blockages and spills due to a very flat gradient network with low volumes.

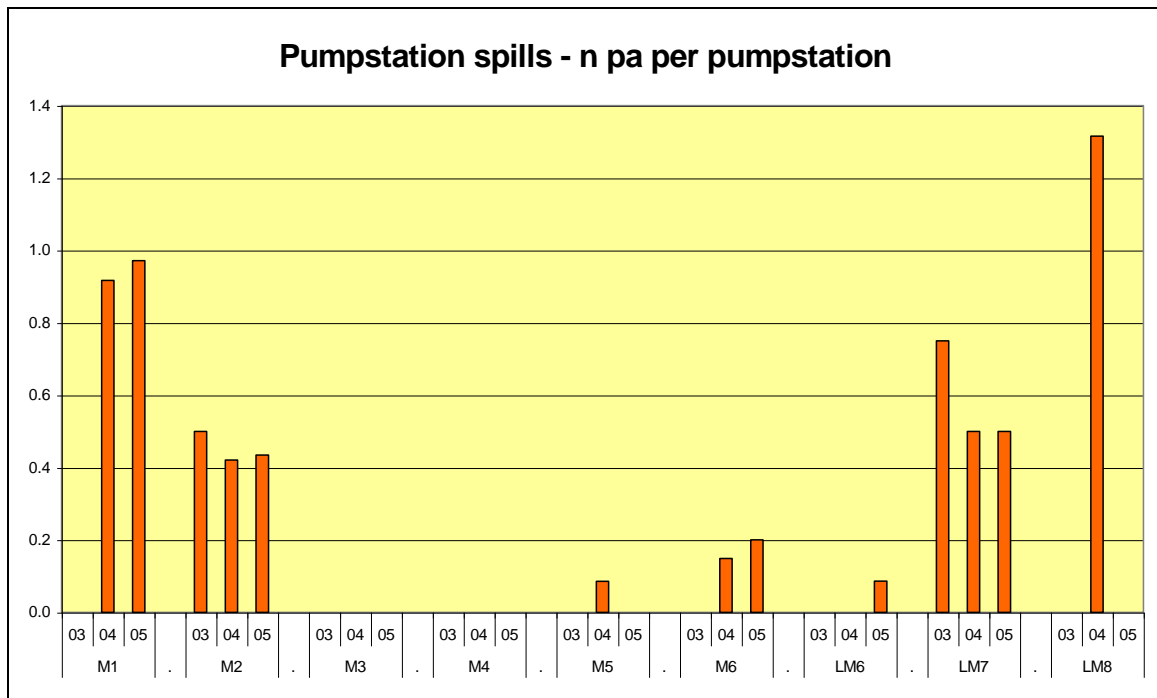


Figure 48: Pump station spills

Pump station spills arising from mechanical and electrical failures can be managed.

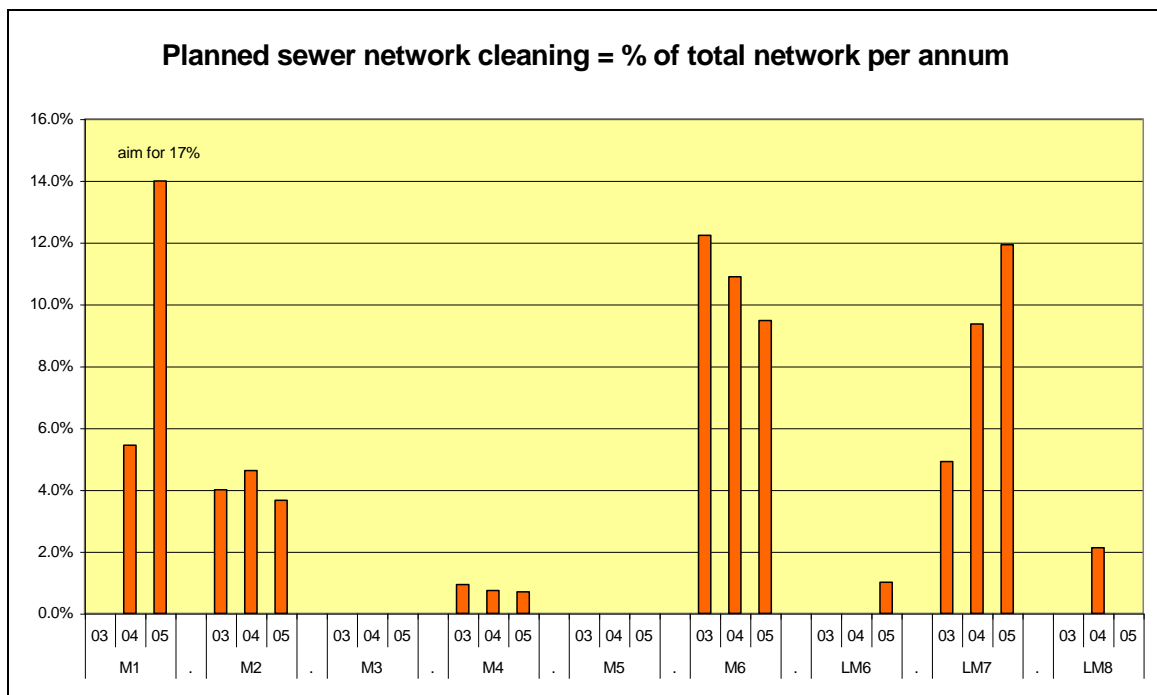


Figure 49: Planned sewer maintenance

Managers need to plan to clean an optimal proportion of the network each year. For example, M1 aims to clean 17% per annum but has not yet achieved this target. On the other hand, M4 cleans less than 1% per annum.

Environment

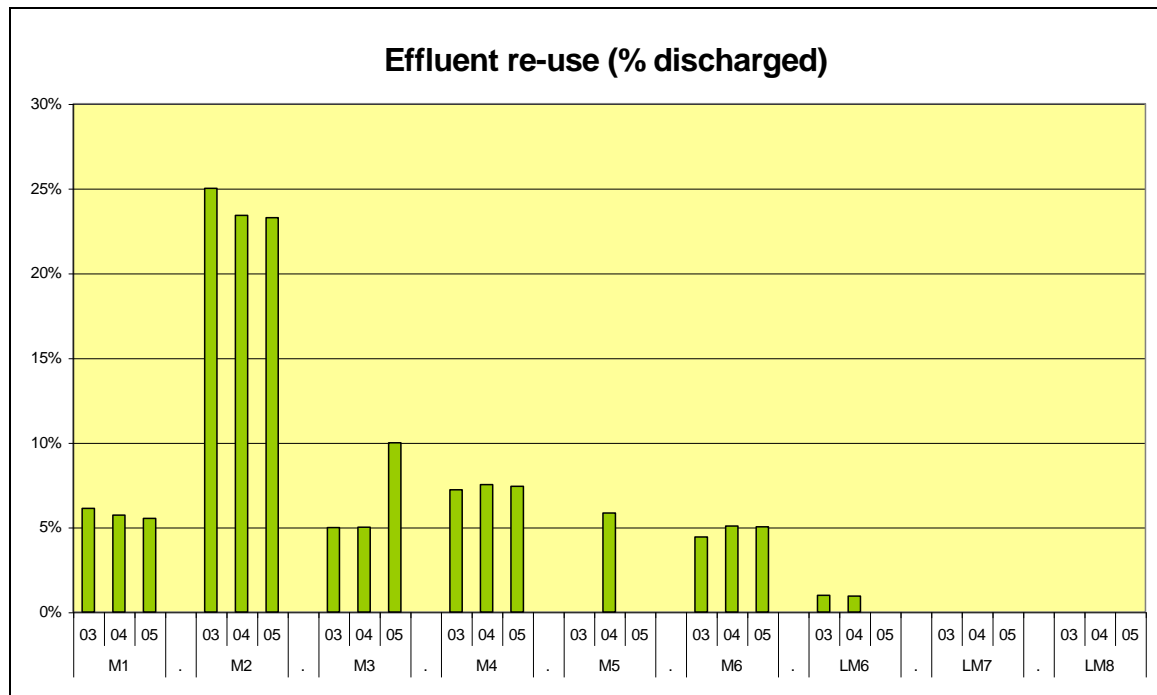


Figure 50: Extent of effluent re-use

M2 re-uses close to 25% of the effluent that has been treated. This could be an important contributing factor to the lower average treatment costs. Other municipalities are able to re-use between 5% and 10%. LM6 does very little re-use.

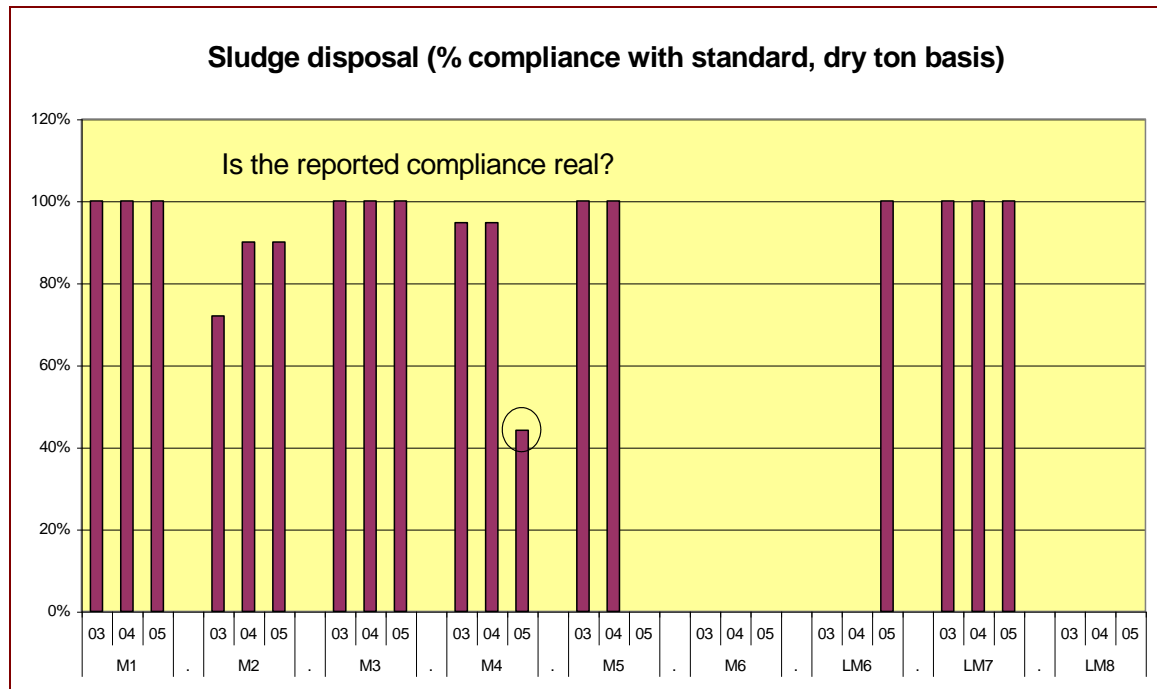


Figure 51: Reported compliance with standards for sludge disposal

Most municipalities report 100% compliance. This needs to be verified.

Human resources perspective

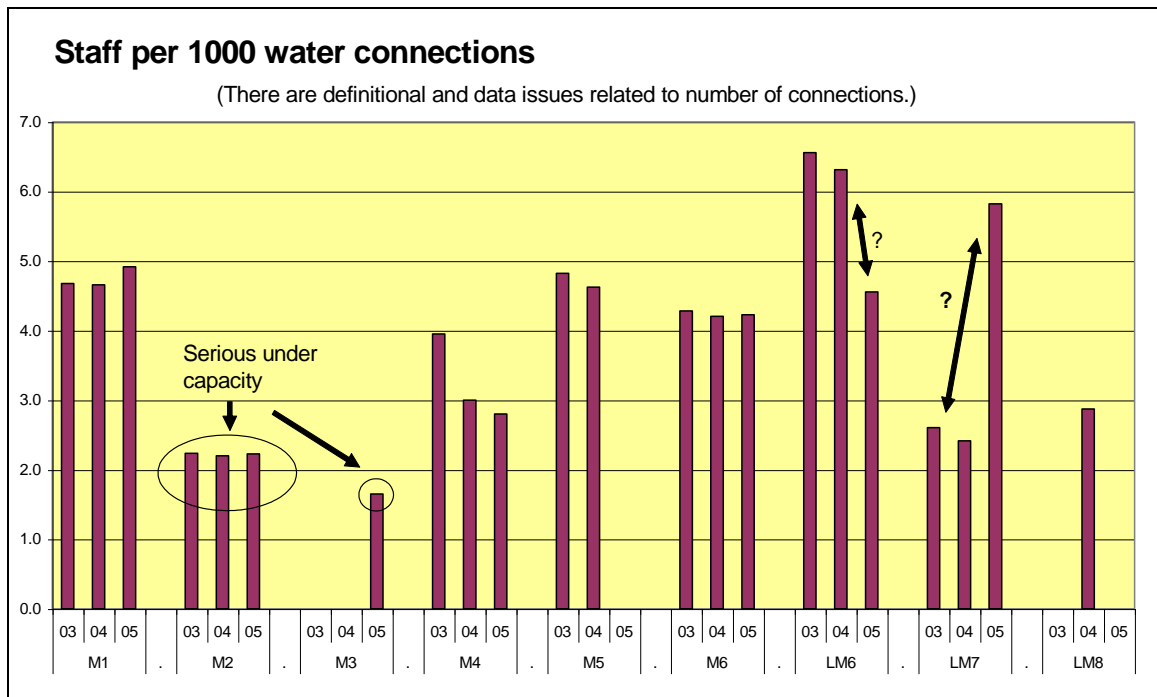


Figure 52: Staff per 1 000 water connections

Note: There are definition and data issues related to the number of connections.

The low levels of staff in M2 and M3 need to be verified. The changes in staff levels for LM6 and LM7 need to be explained.

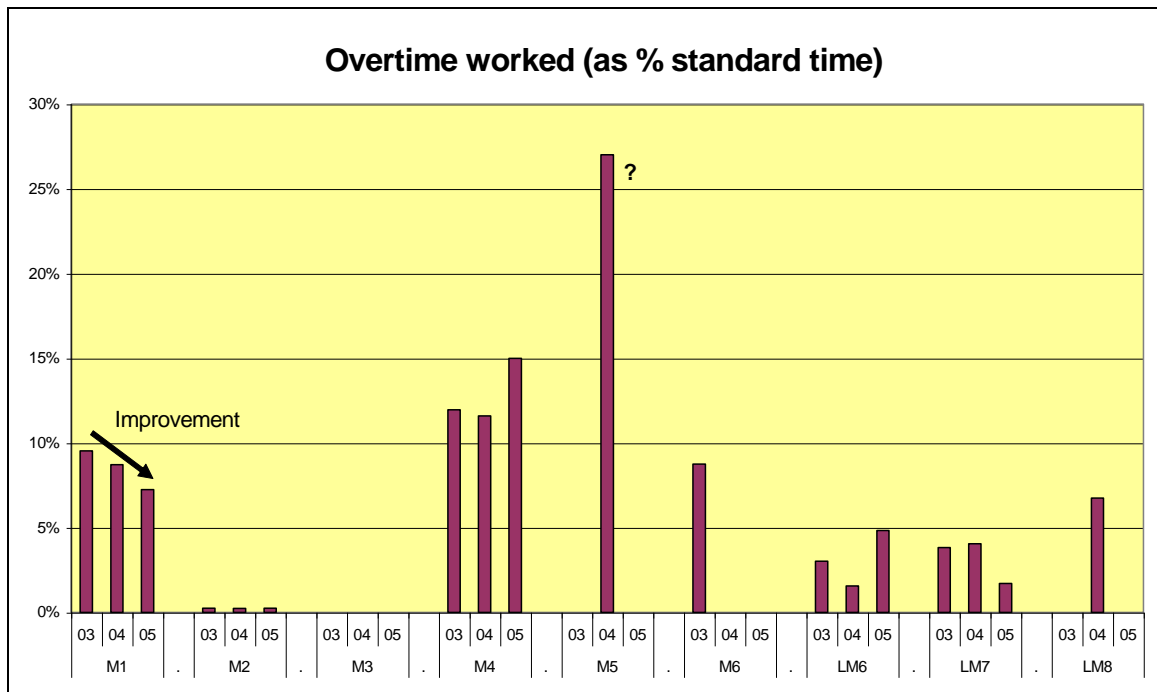


Figure 53: Management of overtime

Both too little and too much overtime indicates a problem with resource levels and allocations. The data for M5 seems anomalous. M1 has improved its management of overtime over the period under review. On the other hand, M4 has worsened. LM6 and LM7 have low levels of overtime.

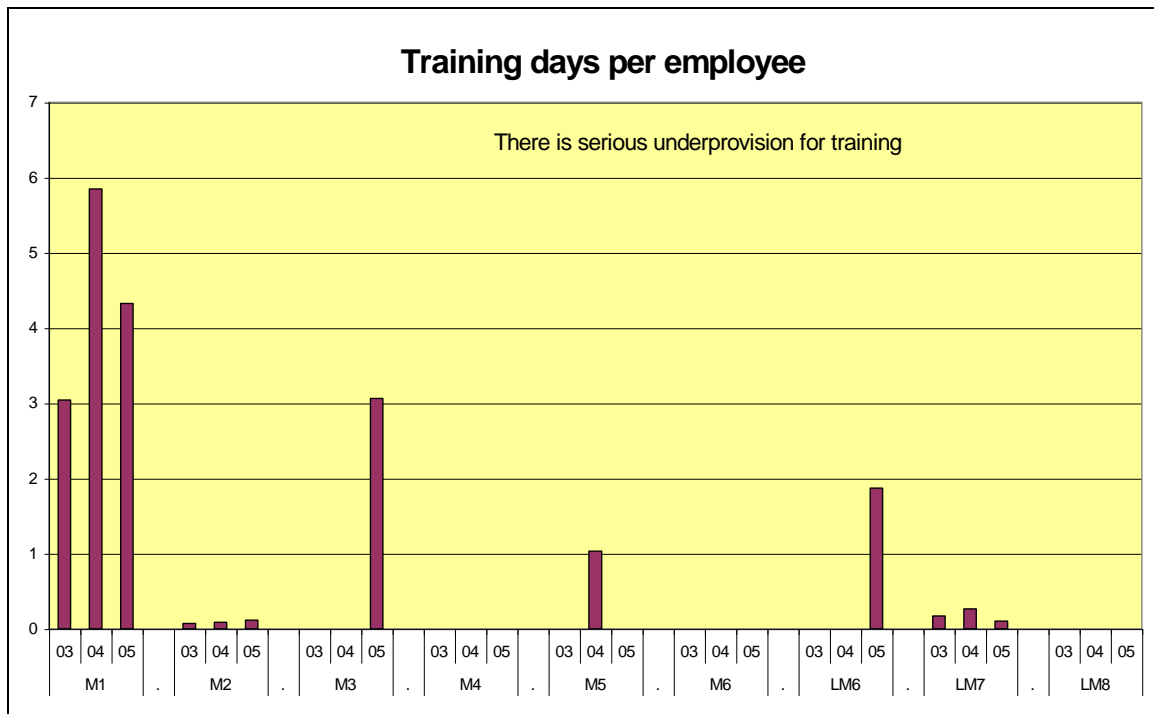


Figure 54: Training days per employee

Only M1 and M3 are investing reasonably in employee development.

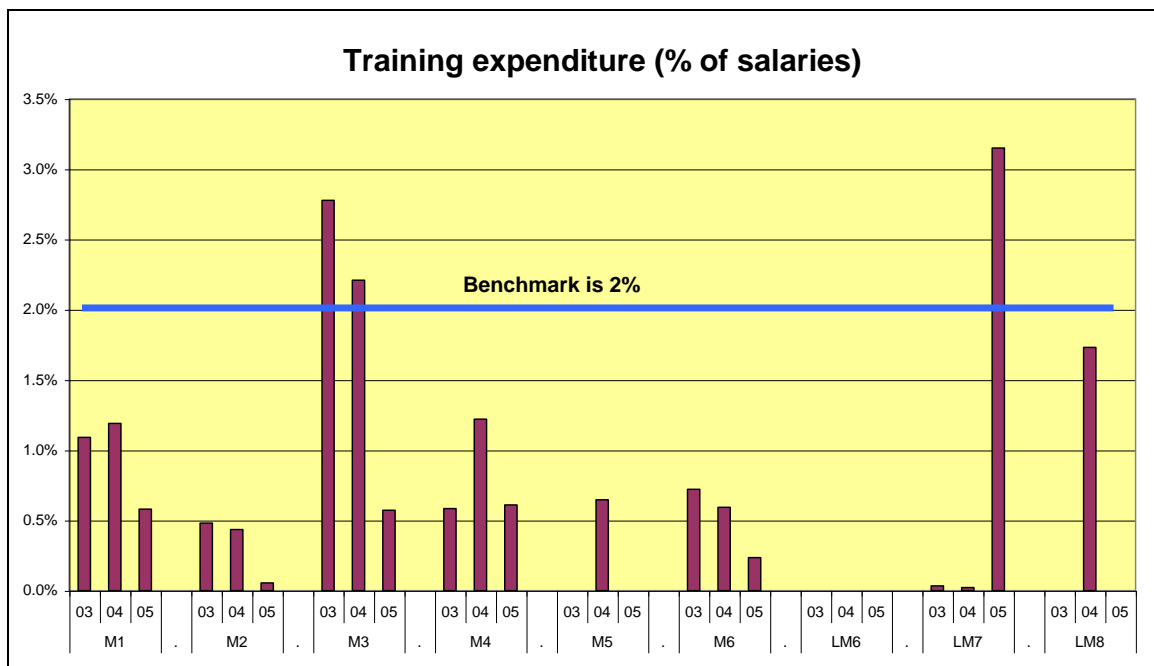


Figure 55: Training expenditure as a percentage of salary expenses

Not one municipality is consistently investing adequately in training.

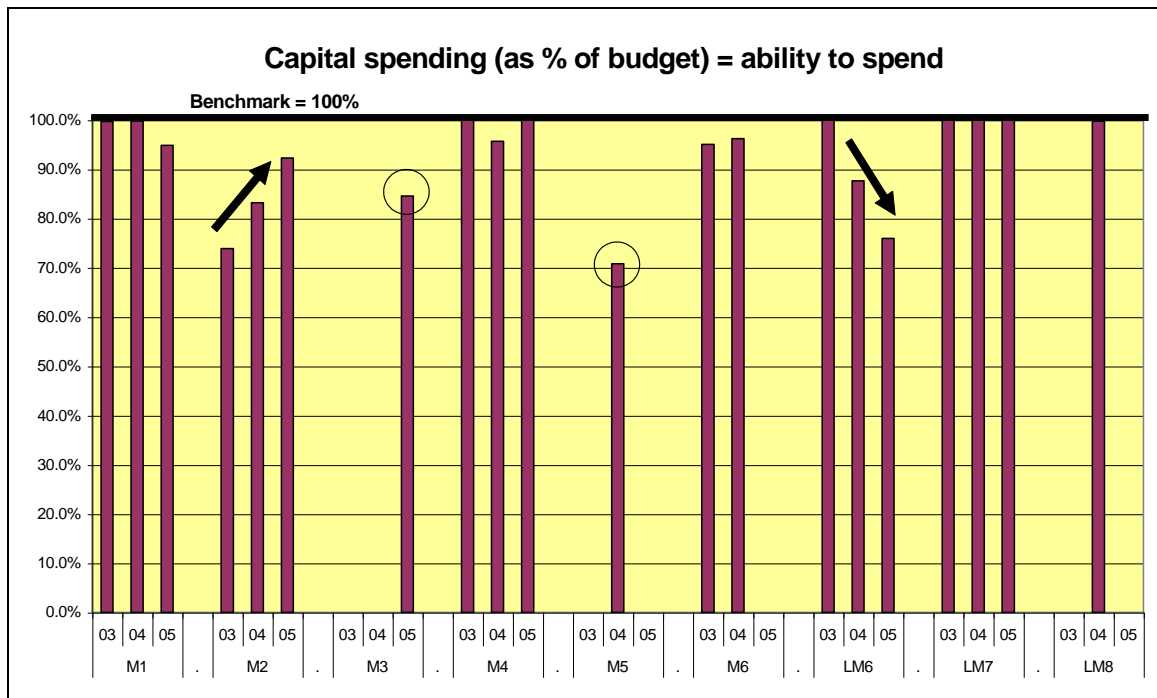


Figure 56: Capital spending versus budget

Some municipalities have experienced difficulties in spending the full capital budget.

Customer perspective

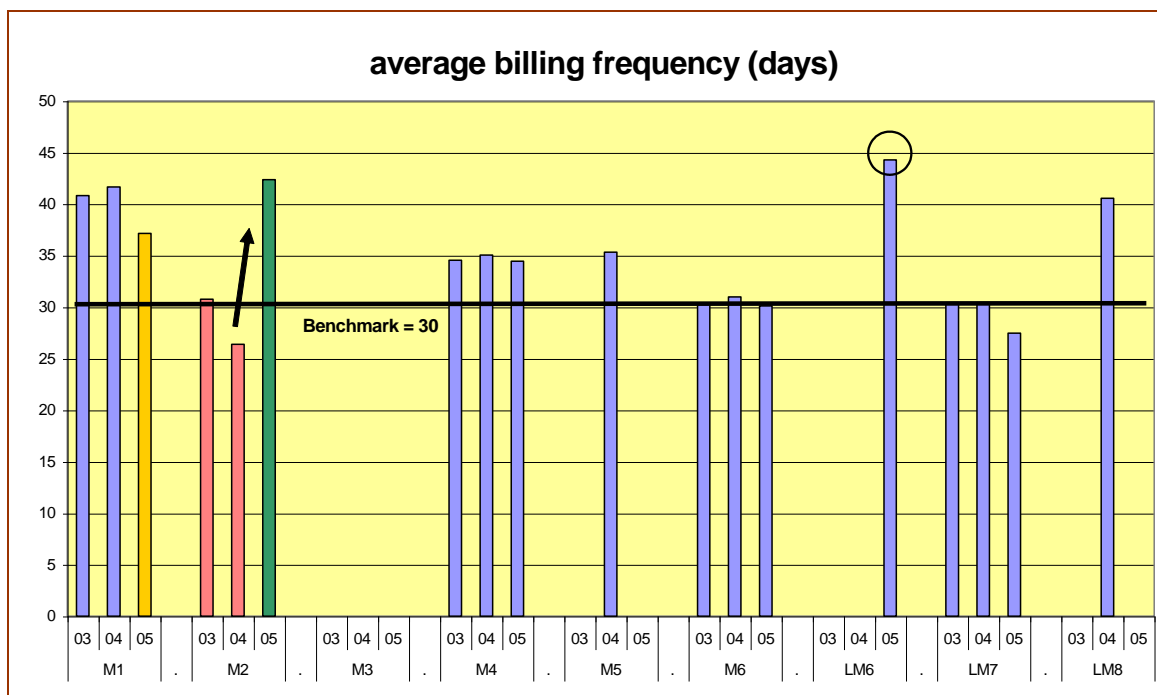


Figure 57: Average billing frequency in days

Some municipalities are unable to get out water bills regularly every 30 days.

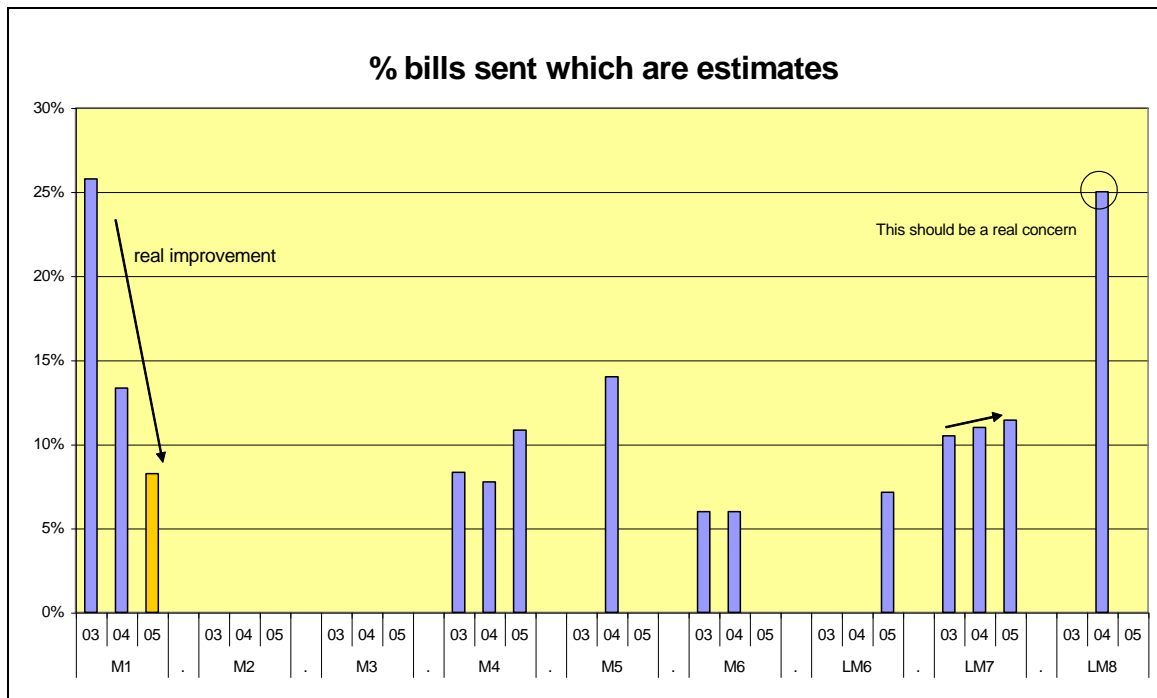


Figure 58: Proportion of bills set as estimates

M1 has improved its performance significantly whereas performance for M4 and LM7 has declined over the period.

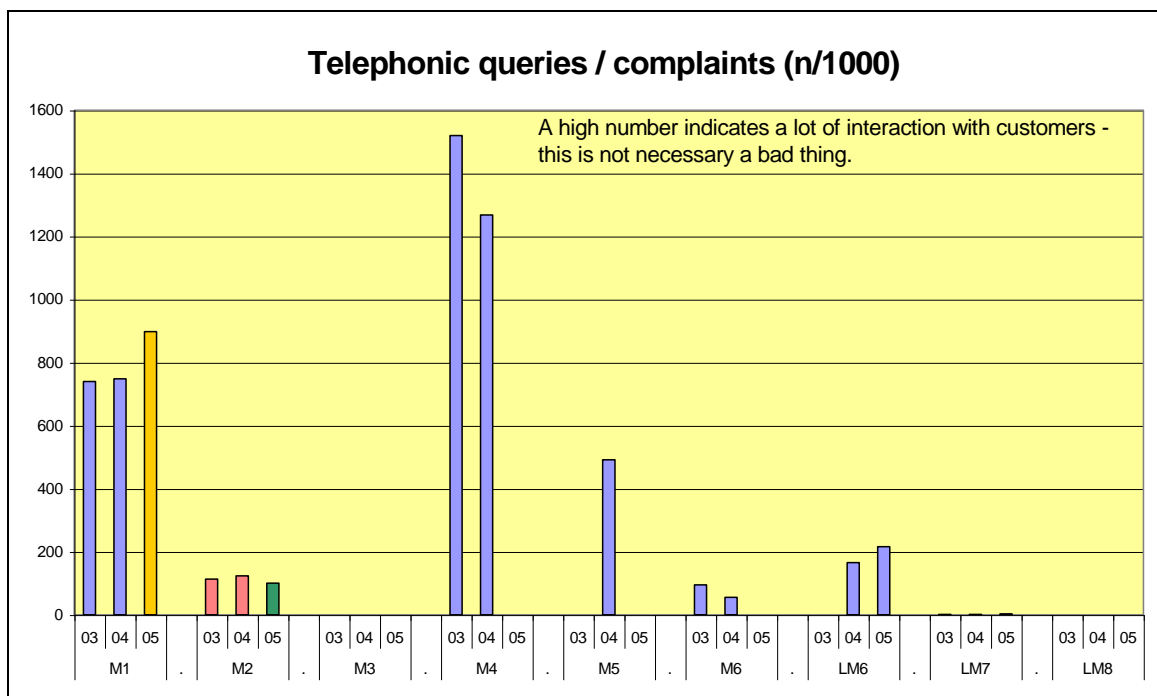


Figure 59: Telephonic queries and complaints

A high number of customer interactions is, paradoxically, a good thing.

5 Inputs by conference delegates

5.1 Questions asked

Four breakaway sessions were held at the annual benchmarking conference. Each group was asked to answer three questions:

1. What two or three initiatives would lead to the *most significant* improvement in performance in the area under discussion? (Please move beyond “more money” as the answer. Focus mostly on what you as a municipality can do.)
2. How can you learn from existing best practice in the sector?
3. Why was it difficult to provide the requested information?

The responses by delegates are summarised by theme below.

5.2 Access

Important initiatives

- Access to water is dependent on the housing roll-out and there must be alignment between the water and sanitation provision and the delivery of housing. All sector plans need to be aligned.
- Definitions are vital – it is important to identify all services specifically. For example, Joburg Water has emergency services (chemical toilets) that are considered backlog in terms of the National Benchmarking Initiative but not by the municipality itself.
- It is important to get guidance on the interpretation of definitions.
- Direct interventions towards the poor are a priority.
- The Expanded Public Works Programme can be used efficiently to deliver basic level infrastructure.
- It is important to strike a balance between access to water and sanitation provision.
- Holistic planning for provision of water is needed.
- When planning and building infrastructure care needs to be taken to integrate bulk and retail supply and demand considerations.
- DWAF should investigate the potential of harvesting rain water in rural areas.
- DWAF should be quicker on approvals related to MIG projects.

Learning from best or good practices

- It is worth finding ways to share success stories better (for example, expanding the conference to 2 days so this can happen).
- It is helpful to tap into existing learning networks.
- The Water Research Commission Water Information Network is available for the documentation of lessons.
- Water services authorities have agreed to submit one good practice each for the next conference.
- National government will introduce an incentive system (see draft Regulation Strategy).
- Field visits will be arranged.

5.3 Drinking water quality

Institutional issues

- There is a need to increase capacity (qualified people and laboratories) and make more use of outsourcing.
- A dedicated team and resources are needed to support the roll-out of the Drinking Water Quality Programme.
- There is a need to address the overlap in roles and responsibilities between DoH and DWAF.
- The Water Research Commission initiatives on drinking water quality should be noted.

Technical issues

Water services providers need to:

- understand the sampling methodology and processes better; and
- develop standard operating procedures.

DWAF needs to:

- develop tools and systems to address capacity issues; and
- develop easy-to-use guidelines (see the DWAF DWQ management guideline and tools).

Operational issues

- Monitoring should be based on risk management principles.
- Disaster management principles, processes and methodologies should be used with built-in procedures to escalate where necessary.

5.4 Effluent discharge

Institutional issues

- DWAF should monitor licences better, clarify their roles and responsibilities.
- There is a need to increase capacity through skills development and knowledge transfer.
- Technical assessments of wastewater treatment works should be undertaken regularly.
- The adequacy of existing operator skills needs to be assessed.
- There is a need to increase technical training in general.
- Water services authorities need to implement water quality by-laws.
- There is a need for improved understanding of water issues by municipal managers. This can be facilitated through peer influence and the use of benchmarking information.

Technical and operational issues

- There is a need to assess network conditions in terms of quality standards and pressure or load reduction.
- DWAF, together with water services authorities, should identify reasons for non-compliance (for example, capacity of works, treatment process and operations,

pressure from unconstrained development, the rapid reduction of backlogs, and funding priorities).

Proposed initiatives

- Water services providers should make maximum use of available expertise, systems and tools.
- DWAF should develop and improve model by-laws, guidelines and procedures.
- There is an urgent and extensive need for training throughout the water services sector.
- Existing sector forums should be used to co-ordinate support activities.
- There is a need for DWAF to increase its own capacity (for example, with respect to water services development plan audits and licence approvals).
- The benchmarking outcomes should be used by all stakeholders to leverage improvements.
- Group networks like the District and City Water Manager Forums have proved to be successful. The model should be replicated where appropriate. For example, a forum for water services managers from local municipalities should be established.
- Water services providers should identify management performance measures that would have the greatest impact on improving their business.
- Communication between councillors and water services authority management should be improved.
- The results of the National Benchmarking Initiative should be published and made available to all water services authorities, not only to participants.

5.5 Asset management

- There is a need to pay more attention to the definition of a water connection and a metered water connection.
- The distinction between bulk, district and retail meters should be made clear.
- Consumers should be encouraged to read their own meters regularly.
- Municipalities must ensure that they read all water meters regularly and replace meters timeously.
- The definition of ring-fencing needs to be improved.
- The benchmarking process should recognise improvements made in the area of asset management, but there is also a need for greater clarity on what exactly an asset management plan should comprise.

5.6 Customer service standards

- A suggestion was made to introduce a toll-free number for rural areas, but it was recognised that this would not be an easy process.
- Water services authorities need clarity on regulatory data requirements prior to implementing information management reporting systems.
- Imposing an urban indicator on rural schemes is not helpful. The National Benchmarking Initiative needs to accommodate at least three different types of municipalities to be able to compare like municipalities.

- Many municipalities face a significant challenge to establish a water services authority function from scratch.
- The age of infrastructure may affect the frequency of customer complaints.

5.7 Financial and institutional

Ring-fencing and audits

- Most agreed that ring-fencing was necessary to understand and control water services finances better (for example, improve access to resources).
- There is no point in ring-fencing a service partially.
- Joburg Water was cited as an example of the benefits of ring-fencing in revealing financial performance.
- Some felt that not all water services authorities have the capacity to be able to ring-fence.

Developing capacity

The following methods for developing capacity were suggested:

- in-service training programs;
- internships and learnerships;
- mentorship programmes (including the use of retired experienced persons); and
- the use of outsourcing to build capacity (noting the need to include skills transfer in contracts).

Skills retention strategies are also very important. In this regard, there is a need to think about the policies, institutional context and systems.

Annual reporting

- Delegates agreed that it is a good practice to report annually on performance.
- There was a lot of discussion on the multiple reporting mechanisms that currently exist. A plea was made for the rationalisation of reporting.
- A proposal was made to establish one portal for the entry of all water services information required by DWAF.
- The need to develop sound management information systems was recognised.

6 Learning from the Canadian experience

The most important lesson from Canada is that the benchmarking process takes time and that many of the benefits will only be realised in the years to come, as illustrated in Figure 60.

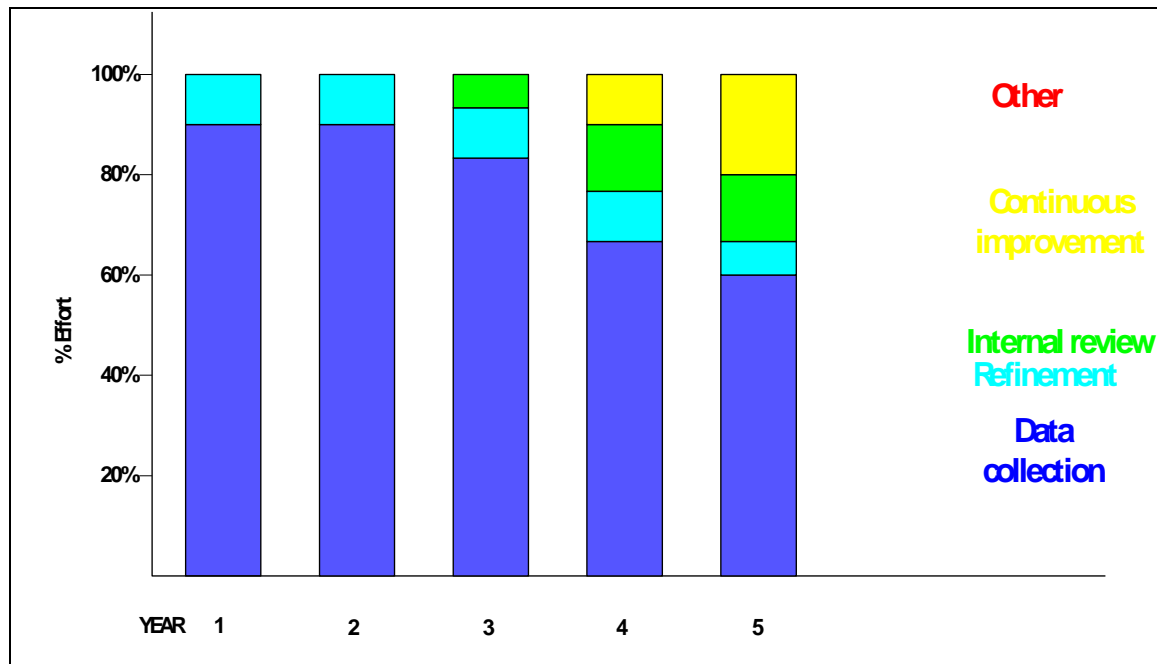


Figure 60: Effort to benefit ratios - the Canadian experience

The second most important lesson is the need to understand the data:

- The data collection process is in itself an indicator of organisational efficiency.
- Data collection requires continuity.
- There is a need to distribute, analyse and discuss the data.
- There is a need to understand the data. For example, low cost is not necessarily an indicator of good performance.
- The data can be used to prompt innovative thinking.
- Over time the emphasis of the benchmarking process can move from data collection to continuous improvement.

The following general recommendations arise from the Canadian experience:

- The methodology is not rocket science but it is hard work.
- Data collection requires communication and team work; it is not about data processing and automation.
- The peer-to-peer networks and annual workshop are essential elements of success.
- We should stick with the benchmarking process as the benefits will come in due course.

7 Conclusions and way forward

7.1 A significant achievement but room for improvement

Notwithstanding the limitations imposed as a result of tight time constraints and limited capacity to engage on the part of many municipalities (see section 2.2), what has been achieved is significant for at least the following reasons:

- This is the first set of *municipal-reported* performance data covering reasonably comprehensive high-level performance outcomes.

- Despite the demanding time-frames and short notices given to participate, as many as 24 municipalities were able to provide data and participate.
- A successful benchmarking conference (based on the conference evaluation and feedback) was held within 3 months of appointing the service provider.
- Many municipalities have expressed the desire to participate in future rounds.

These achievements are significant even when compared to international best examples of benchmarking process such as the Canadian experience (see, for example, the conference presentation on the Canadian experience made by Chris Lombard of EarthTech).

Nevertheless much scope exists for improvement, particularly in the following ways:

- More relaxed time-frames to allow for proper engagement.
- Building data verification into the process.
- Focusing more on the identification of best practices and learning from these.
- More precise data definitions.
- Improved data and indicator templates (and better integration of the regulatory KPIs with the additional more focused KPI sets).

Concrete proposals for the way forward are set out in the following sections.

7.2 Time-frames for 2006

It is proposed that the time-frames for 2006 be based on the annual cycle set out in Table 1.

7.3 Development of additional indicator sets

7.3.1 Categories of water services authorities

It was proposed at the conference, and accepted, that there should be four categories of water services authorities, as follows:

1. Metropolitan: large urban networks; very little rural (relatively speaking) and strong economies of scale.
2. Secondary cities (B1): medium-sized urban networks and some industry; may also have rural.
3. Medium and small towns with no rural (B2): dispersed small towns but with no rural (only commercial farm land).
4. Predominantly rural with some small and medium towns (districts): large rural populations with some small and medium-sized towns.

It was also proposed at the conference, and accepted, that four sets of benchmarks should be developed to correspond with these categories of water services authority as follows:

1. **Regulatory set:** a compulsory set for all water services authorities (a refined version of what was presented in section 3 of this report).
2. **Urban network set:** a set of indicators appropriate for large urban networks.
3. **Distributed medium and small town set:** a set oriented to smaller dispersed urban networks.
4. **Rural set:** a set oriented to rural water provision.

These sets of indicators could then be applied as follows:

Application of benchmark sets

	Regulatory set	Urban networks	Distributed Small towns	Rural
Metro	✓	✓		
B1 municipalities (secondary cities)	✓	✓		✓
B2 municipalities (small towns)	✓		✓	
B4 and District municipalities	✓		✓	✓

Figure 61: Application of benchmark sets

The current status of these benchmarking sets is shown below.

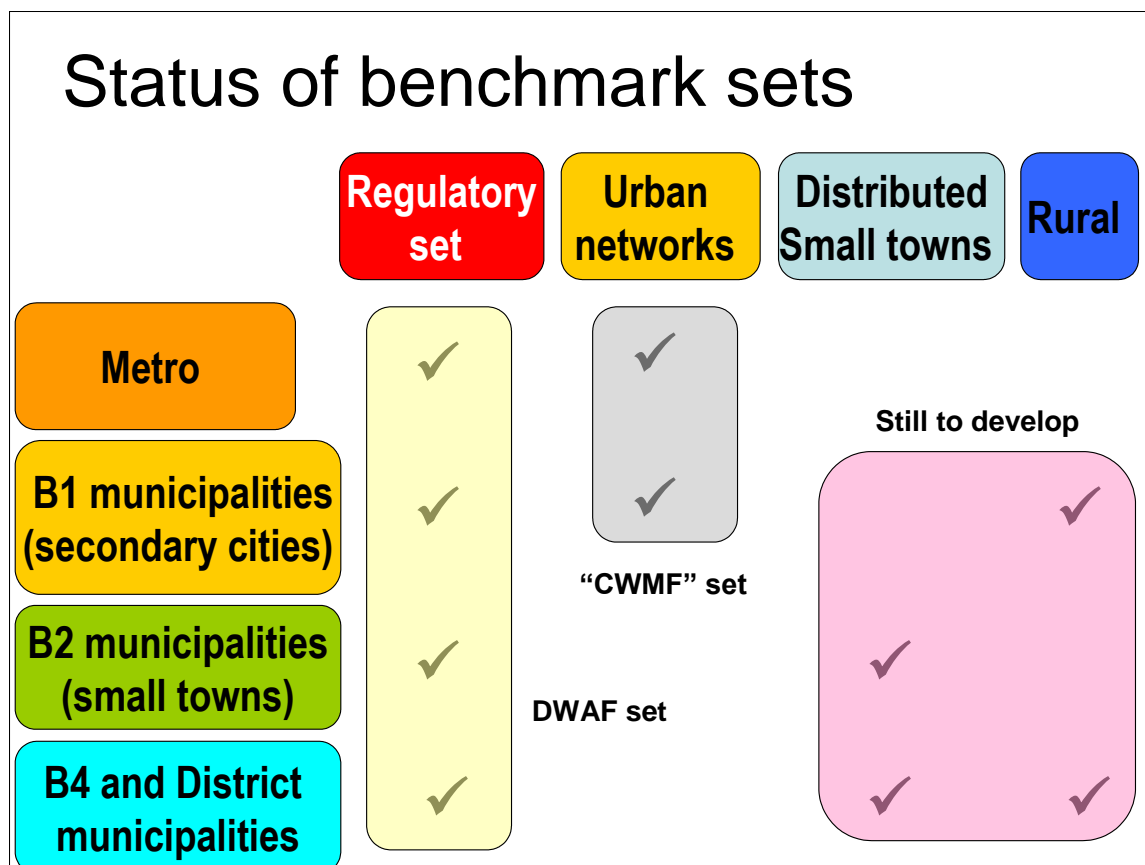


Figure 62: Status of benchmark sets

The regulatory set exists, but needs some refinement. The urban (CWMF) set exists and also needs some refinement. Both the distributed small towns set and the rural set still need to be developed. It is recommended that these two sets of indicators be developed as follows:

- **Rural set:** SALGA should facilitate engagement with the District Water Managers Forum with a view to developing a rural set of indicators.
- **Distributed small town set:** SALGA should facilitate the constitution of a "Towns Water Managers Forum" and the engagement with this forum to develop a set of appropriate indicators for small dispersed towns.

7.4 Refining existing indicator sets

It is proposed that the existing two indicator sets be refined as follows:

- **Regulatory set:** DWAf will revise the regulatory set taking into account the recommendations arising from this report and as guided by the National Benchmarking Initiative steering committee, with improved integration with the urban network set.
- **Urban network set:** the City Water Managers Forum will review and revise the urban network set with a view to improving integration with the regulatory set.

7.5 Length of engagement with municipalities

During the conference a plea was made by participants for greater engagement with the service provider to assist with the preparation of the data and calculation of the indicators. ("Revise the TOR to allow for more visits and time to the rural municipalities"; conference

delegate, December 2005.) The service provider is currently constrained to a limited period of 8 hours of engagement per participating municipality (on average, including travel time) in terms of the option selected by the implementing agent.

Recommendation: The implementing agent reconsider the choice of options put forward with a view to extending the length of engagement to the recommended time of 24 hours per participating municipality.

7.6 Additional support to participating municipalities

During the conference a plea was made for DWAF and/or SALGA to make available additional resources to water services authorities to enable them to participate more fully in the benchmarking process. (*“Support is not a one hour meeting in our district; come for a week!”*; conference delegate, December 2005.)

7.7 Learning from best practices

During the next benchmarking round, each water services authority will be invited to put forward one area of best practice on which they would be willing to present at the annual conference. A selection of these will be made each year for presentation to the annual conference.

7.8 Development of peer networks

The National Benchmarking Initiative will encourage the development of appropriate peer networks such as the District and City Water Manager Forums. These are ideal places to share knowledge of best practices as these are able to meet regularly.

7.9 More time to engage at the annual conference

It is proposed to extend the length of the conference to two full days in response to a strong request to do so by participants.

7.10 Positive incentives to perform

The National Benchmarking Initiative will work with DWAF to incorporate an awards ceremony at the annual conference, along the lines put forward in the draft National Water Services Regulation Strategy.

7.11 Streamlining municipal reporting requirements

The National Benchmarking Initiative will work with DWAF and SALGA to streamline and simplify reporting requirements for municipalities.

7.12 Attendance at next conference

A request was made that SALGA encourage all water services authority managers to attend the annual benchmarking conference.

Annexure: Benchmarking Data