

# Using Management Information from Performance Measurement to Improve the Effectiveness of Resource Deployment in Municipalities

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## INTRODUCTION

The Department of Water and Environmental Affairs (DWEA), as the sector leader and custodian of the nation's water resources, has the objective of improving water management in general. With regard to water services, given that Local Government is responsible for delivering services to consumers, has a mandate to regulate Water Services Authorities.

It is within DWEA's regulatory mandate, therefore, to monitor, evaluate, report and publish performance of water service authorities. The Department has therefore developed the National Water Services Regulation Strategy (NWSRS) (DWEA 2008) in order to spell out the actual activities and pave the way that it has to undertake in fulfilling this role.

To fulfil its mandate effectively, DWEA needs a mechanism or tool. This tool is the Regulatory Performance Measurement System (RPMS).

## THE REGULATORY PERFORMANCE MEASUREMENT SYSTEM

The RPMS is a DWEA initiative which is currently being rolled-out nationally. The system measures Water Services Authorities on 11 key performance indicators (KPIs) derived from the Strategic Framework for Water Services (DWEA 2003), and from the NWSRS. The 11 KPIs are as follows:

- KPI 1: Access to water supply
- KPI 2: Access to sanitation
- KPI 3: Access to FBW
- KPI 4: Access to FBS
- KPI 5: Drinking water quality
- KPI 6: Waste water quality
- KPI 7: Customer services standards
- KPI 8: Institutional effectiveness
- KPI 9: Financial performance
- KPI 10: Strategic asset management
- KPI 11: Water use efficiency

The aim of the system is to determine WSA compliance with national norms and standards and to identify performance and performance trends.

The objectives of the system are as follows:

- To improve business practice as regards water services delivery in local government
- To improve local government compliance with national standards and norms

- To improve the impact of DWEA's regulatory processes through ensuring that responses to non-compliance are uniform and standardized across South Africa
- To ensure that the data collected from local government is verifiable, accurate and useful to other processes, and will deliver a benefit to local government through strategic feedback on problem areas

The RPMS is therefore, a simple tool to be used by the Regulator to measure performance against key performance indicators and to determine performance trends with the intention of promoting best practice in the sector. Regulation is an activity, and the regulator must manage the consequences of non-compliance to national regulations. Therefore, the regulatory tool must support the management of those consequences. It is important that the regulator reacts objectively, uniformly and transparently to non-compliance. This requires a system, thus the RPMS.

## **UNDERSTANDING PERFORMANCE MEASUREMENT**

Most people are familiar with the statement made by Lord Kelvin: "To measure is to know". This is the concept upon which the RPMS is based. The above phrase states very clearly the fact that if an activity cannot be measured, it cannot be controlled. Without control, management is haphazard and ineffective. Business performance management (BPM) is a set of processes that help organizations optimize their business performance. BPM, therefore, helps businesses make efficient use of their financial, human, material and other resources.

Performance measurement is "the process of developing measurable indicators that can be systematically tracked to assess progress made in achieving predetermined goals or standards" (GAO 1998). To achieve this, it is important to establish an approach to gathering reliable and verifiable information in order to measure activities against defined standards, for example, regulatory standards. Performance measurement is an essential component of achieving best practice through striving for continuous improvement in the entity's key business processes. For the regulator, it is essential that the WSAs are measured against the regulatory framework established under national legislation, thus establishing the "predetermined goals or standards" around which performance measurement is based.

A performance measurement system can be defined as "a formal, regular, rigorous system of data collection and usage that provides measures in changes in effectiveness and efficiency, in order to illustrate the relative performance of [an entity over time]" (NHS 2008).

### **What is an indicator?**

It is important to note that an indicator does only that: indicate. A key performance indicator can be defined as "a significant measure used on its own or in combination with other key performance indicators, to monitor how well a business is achieving its quantifiable objectives" (Georgetown University undated). In this case, the quantifiable objectives of a public service entity, such as a WSA, are those defined by national norms and standards, and therefore the RPMS relates performance to regulatory standards. It was necessary to address those standards, as well as the requirements of the regulatory framework with regard to the responsibilities of both DWEA and WSAs, in the design of the system. Therefore the concept of an indicator (in this case, high-level management indicator) is significant for the RPMS.

Indicators focus the strengths and weaknesses of a business. Once these are identified, resources can be applied more strategically to minimize areas of weakness.

An example of this concept is evidenced by the New York Stock Market. The Dow Jones Industrial Average (DJIA) is a significant indicator of the "health" of the market however it comprises only 30 of the top US companies. It is this concept which was applied in the RPMS through the measurement of "critical issues" in each of the 11 key performance areas.

Each KPI is scored out of five, and therefore a graded performance measure can also be applied to the scores achieved by WSAs. This performance assessment is particularly valuable in terms of determining areas of weakness within the broader KPI score. Each component is individually scored on a performance basis resulting in the ability to determine and prioritise areas of weakness in the WSA.

## **METHODOLOGY**

The KPIs require particular data to be calculated and the RPMS dataset comprises some seventy-five “items” or data elements. From existing systems in DWEA, it is possible to obtain data automatically for the data elements that relate to KPIs one to six. The remaining data must be sourced directly from the municipalities. All RPMS data falls within regulatory imperatives, that is that WSAs are required to provide the data to various government departments, in the form of various reports, e.g. the Water Services Development Plan or Annual Financial Report for the Municipality.

Data collection for the 07/08 municipal financial year is well underway, with the 08/09 data collection process due to commence in August 2009.

## **PRELIMINARY RESULTS IN SELECTED PROVINCES FOR FINANCE, ASSET MAANGEMENT AND WATER USE EFFICIENCY**

Figures 7 and 8 show a comparative analysis of the Gauteng and Western Cape regions for KPIs 9 and 10.

From the reports below, it can immediately be seen that in the case of Gauteng, the priority area in KPI 9, financial performance, is average debtor days. It is clear from the evaluation “Area of concern” attributed to both Gauteng, that on average, municipalities are not addressing their doubtful debt adequately, which is resulting in high average debtor days, thus a low performance evaluation. In the Western Cape, however, the priority is Revenue Collection Efficiency. In Western Cape municipalities, the cash collection percentages are low; resulting in a performance evaluation of “Area of Concern”, while average debtor days is becomes the second priority (evaluated as “Satisfactory”).

In Gauteng, the second priority is “financial integrity”, which relates to audit report evaluations and ring-fencing, while in the Western Cape, the second priority is revenue collection efficiency, which is evaluated as an area of concern. Therefore, while in Gauteng, municipalities either not adequately ring-fenced, or are receiving negative evaluations from the Auditor-General, in the Western Cape, actions need to be taken to improve the revenue collected from what is billed.

For KPI 10, once again, both regions show the same first priority; Replacement Saving. This indicates that on the whole, municipalities are not providing sufficient funds for asset replacement. The measure requires that replacement saving at least equal depreciation in a financial year. The second priority area under Strategic Asset Management is O&M expenditure in Gauteng. Therefore, in Gauteng, the amount spent on O&M does not relate sufficiently to the value of their assets. In the Western Cape the second priority is “Asset management effectiveness”. This indicates that the Western Cape municipalities (on the whole) do not have sufficient frameworks or systems in place for asset management planning and infrastructure inventory management.

It can also be noted that on the whole, average scores are lower in the Western Cape than they are in Gauteng.

The RPMS can produce a wide range of reports, related to the other aspects of the system, but even the collection of data from approximately one third of the WSAs in the country has begun to yield results in terms of critical priority areas. The system is designed, therefore to provide both DWEA and the WSAs with essential management information for sector-wide improvement of business practise.

# REGULATORY PERFORMANCE MEASUREMENT SYSTEM

## Gauteng REGION - CONSOLIDATED PERFORMANCE REPORT

Legend:	
0-1	Crisis situation - needs urgent
>1-2	Area of concern
>2-3	Satisfactory
>3-4	Good
>4-5	Excellent

KPI No.	Component name	City of Tshwane Metropolitan Municipality	Mogale City Local Municipality	Nokeng tsa Taamane Local Municipality	City of Johannesburg Metropolitan Municipality	Westonaria Local Municipality	Randfontein Local Municipality	Lesedi Local Municipality	Emfuleni Local Municipality
9	Financial integrity	Satisfactory	Crisis	Satisfactory	Excellent	Good	Satisfactory	Satisfactory	Crisis
	Average debtor days (water and sanitation)	Excellent	Crisis	Crisis	Crisis	Crisis	Excellent	Crisis	Crisis
	Revenue collection efficiency	Crisis	Crisis	Excellent	Excellent	Excellent	Good	Excellent	Crisis
	Average creditor days (bulk water)	Good	Excellent	Excellent	Crisis	Crisis	Excellent	Crisis	Crisis
	Financial sustainability	Excellent	Excellent	Good	Excellent	Crisis	Crisis	Excellent	Excellent

Priority:		Averaged values
2	Financial integrity	2.32
1	Average debtor days (water and sanitation)	1.38
4	Revenue collection efficiency	2.70
3	Average creditor days (bulk water)	2.38
5	Financial sustainability	3.75

KPI No.	Component name	City of Tshwane Metropolitan Municipality	Mogale City Local Municipality	Nokeng tsa Taamane Local Municipality	City of Johannesburg Metropolitan Municipality	Westonaria Local Municipality	Randfontein Local Municipality	Lesedi Local Municipality	Emfuleni Local Municipality
10	Asset management effectiveness	Excellent	Satisfactory	Good	Satisfactory	Good	Good	Crisis	Crisis
	O&M expenditure	Excellent	Crisis	Crisis	Good	Excellent	Crisis	Excellent	Crisis
	Rehabilitation and replacement expenditure	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured
	Replacement saving	Crisis	Crisis	Crisis	Crisis	Excellent	Excellent	Excellent	Crisis
	Asset register monitoring (5 key elements)	Satisfactory	Crisis	Satisfactory	Excellent	Excellent	Good	Excellent	Crisis

Priority:		Averaged values
2	Asset management effectiveness	2.50
2	O&M expenditure	2.50
	Rehabilitation and replacement expenditure	Not measured
1	Replacement saving	1.88
4	Asset register monitoring (5 key elements)	3.75

Figure 1: Gauteng consolidated report for KPI 9 and 10

# REGULATORY PERFORMANCE MEASUREMENT SYSTEM

## Western Cape REGION - CONSOLIDATED PERFORMANCE REPORT

Legend:	
0-1	Crisis situation - needs urgent
>1-2	Area of concern
>2-3	Satisfactory
>3-4	Good
>4-5	Excellent

KPI No.	Component name	Bitou Local Municipality	Stellenbosch Local Municipality	Central Karoo Local Municipality	Laingsberg Local Municipality	Cape Town Metro Municipality	Knysna Local Municipality	Swartland Local Municipality	George Local Municipality	Overstrand Local Municipality	Bergrivier Local Municipality
9	Financial integrity	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Excellent	Good	Good	Excellent	Satisfactory	Concern
	Average debtor days (water and sanitation)	Excellent	Crisis	Satisfactory	Excellent	Crisis	Crisis	Excellent	Crisis	Crisis	Satisfactory
	Revenue collection efficiency	Satisfactory	Crisis	Concern	Satisfactory	Excellent	Excellent	Good	Crisis	Crisis	Crisis
	Average creditor days (bulk water)	Excellent	Crisis	Crisis	Excellent	Excellent	Crisis	Excellent	Excellent	Excellent	Excellent
	Financial sustainability	Excellent	Crisis	Good	Good	Excellent	Excellent	Crisis	Good	Excellent	Excellent

Priority:		Averaged values
4	Financial integrity	3.15
2	Average debtor days (water and sanitation)	2.10
1	Revenue collection efficiency	1.97
3	Average creditor days (bulk water)	3.05
5	Financial sustainability	3.35

KPI No.	Component name	Bitou Local Municipality	Stellenbosch Local Municipality	Central Karoo Local Municipality	Laingsberg Local Municipality	Cape Town Metro Municipality	Knysna Local Municipality	Swartland Local Municipality	George Local Municipality	Overstrand Local Municipality	Bergrivier Local Municipality
10	Asset management effectiveness	Satisfactory	Satisfactory	Crisis	Satisfactory	Concern	Crisis	Concern	Good	Concern	Concern
	O&M expenditure	Crisis	Concern	Crisis	Good	Concern	Crisis	Excellent	Excellent	Crisis	Good
	Rehabilitation and replacement expenditure	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured
	Replacement saving	Crisis	Excellent	Crisis	Crisis	Excellent	Crisis	Excellent	Good	Crisis	Crisis
	Asset register monitoring (5 key elements)	Excellent	Crisis	Crisis	Excellent	Crisis	Good	Excellent	Excellent	Good	Excellent

Priority:		Averaged values
2	Asset management effectiveness	1.92
3	O&M expenditure	2.01
	Rehabilitation and replacement expenditure	Not measured
1	Replacement saving	1.41
4	Asset register monitoring (5 key elements)	3.80

Figure 2: Western Cape consolidated report for KPI 9 and 10

KPI 11, water use efficiency, shows a very different picture. In all regions, preliminary results show that this is the lowest scoring indicator. The reason for this is that most of the WSAs are not able to supply accurate figures for the system to calculate a viable non-revenue water percentage. Very often, the WSA cannot supply any data at all. Of those that have supplied data, much of the data is such that the system indicates that there is a data anomaly, since when the formula<sup>1</sup> is applied, a negative percentage or a percentage considerably greater than 100% results. A data anomaly indicates that the WSA is not able to provide accurate data and the conclusion can be drawn that they are not able to measure distribution and treatment volumes accurately. Finally, where WSAs supply data which is such that the non-revenue water percentage can be calculated, most WSAs are showing an NRW percentage of over 30%. For the most part, individual WSA performance evaluations show KPI 11 as a crisis area. Because water is becoming increasingly expensive, this has significant implications for the Municipality's bottom line.

## **CONCLUSIONS AND RECOMMENDATIONS**

It can be concluded that systematic measurement of performance delivers significant management information to WSAs, in the sense that they are able to concentrate resources strategically, in their areas of weakness. The system also delivers value to DWEA, in the sense that it is able to prioritise areas which require regulatory action, thereby streamlining the deployment of DWEA's resources into areas which show the most pressing need for improvement.

Without effective measurement, knowledge and understanding of water services management information, services delivery is impossible. A systematic approach to the collection and provision of data is essential for effective monitoring, in terms of both regulatory and management requirements. Therefore, having an effective and methodical system of data collection, information processing and monitoring, such as the RPMS, can have a significant effect on management efficiency with positive implications for service delivery.

Capacity development initiatives should be focused on the needs of the municipality. In order to achieve this, a systematic analysis of the needs of the municipality should be in place. It is therefore recommended that resources are directed to the implementation of a systematic analysis such as the RPMS framework. This will allow for more purposeful initiatives which have an actual impact on business practise in water services delivery.

The approach to carrying of these recommendations should be structured and systematic, in order to deliver a defined benefit and to monitor the achievement of measurable goals. For example, if the goal is to "improve business practise", the dimensions of that goal must be clearly defined, and measurable criteria demonstrating achievement of that goal identified. Without a system, the impact of support, capacity-development and regulatory activities cannot be determined, which means that it cannot be replicated or applied in other areas or organizations, and the sector as a whole cannot improve its performance.

It is essential to concentrate only on the critical issues in the first iterations of the implementation of the system, and implementation must take place within a coordinated context which has established communications mechanisms for consolidating requests to local government for data. The RPMS, as a national government system or tool, is an example of the initiation of an intra-department coordinated approach.

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1  $(\text{Total volume of treated water purchased (last financial year)} + \text{Total volume of water treated in-house (last financial year)} - \text{Total volume of bulk treated water sold}) - (\text{Total authorised billed volume for the last financial year} + \text{Total FBW volume not included in authorised billed volume}) / (\text{Total volume of treated water purchased (last financial year)} + \text{Total volume of water treated in-house (last financial year)} - \text{Total volume of bulk treated water sold}) * 100$

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