HARNESSING A VULNERABILITY BASED MUNICIPAL STRATEGIC SELF-ASSESSMENT TOOL TO SUPPORT AND ENABLE SUSTAINABLE WATER SERVICE DELIVERY BY LOCAL GOVERNMENT

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Local Government in South African has contributed towards the achievement of a number of significant social and economic development advances. The majority of South Africans now have significantly increased access to a wide range of basic and improved services, including water services. Nevertheless, South Africa, like many developing countries, faces significant challenges in the sustainable provision of adequate and safe water services, and recent assessments show that there are many Water services Authorities (WSAs) that are in deep distress. This situation has led to a series of intergovernmental efforts to turn the tide, or affect a successful Turn-Around Strategy, for Local Government. This paper provides feedback on a long running initiative by the national Department of Water Affairs (DWA) which harnesses a municipal self assessment to direct attention to key areas of vulnerability within the business health of a municipality to provide sustainable water services. The outcomes also inform the high priority Local Government Turnaround Strategy and the associated efforts of all tiers of government towards efficient, effective and sustainable water services delivery.

1. INTRODUCTION AND PURPOSE

Local Government in South African has contributed towards the achievement of a number of significant social and economic development advances since the introduction of the democratic municipal dispensation in South Africa during December 2000. The majority of South Africans now have significantly increased access to a wide range of basic and improved services, including water services. Nevertheless, South Africa, like many developing countries, faces significant challenges in the sustainable provision of adequate and safe water services. In South Africa the responsibility for water services delivery resides with designated local government authorities (i.e. local or district municipalities) who are termed Water Services Authorities (WSAs).

Notwithstanding the valuable role that local government WSAs have played in the provision of improved water services delivery, including considerable progress in addressing water services backlogs, key elements of the local government system

have been showing signs of distress in the last few years (CoGTA, 2010). Against the backdrop of an ongoing need to continue accelerating service delivery in order to meet the 2014 service delivery targets, many municipalities continue to have *inter alia* inadequate drinking water and effluent treatment, poor associated water quality management practises, a lack of proper infrastructure operations and maintenance, and a lack of the necessary asset management practices, altogether resulting in many dysfunctional schemes and even the eventual collapse of some schemes. This is within an environment of growing development-driven water demand, as housing development and service upgrading accelerates, and is in conflict with increasingly stressed water resources.

This paper provides feedback on a successful initiative by the national Department of Water Affairs (DWA) to assess, assist and guide local government's capacity to provide sustainable municipal water quality management (via the use of a municipality specific risk based strategic self-assessment) and as to how this initiative is now being enhanced to provide a broader assessment as to the "business health" of water services delivery by local government WSAs and thereby both guide and assist therein.

2. CONTEXT

2.1 Current Business Health of Local Government Water Services Delivery

In October 2009 DWA undertook an assessment of the state of water services provision in municipalities across South Africa. The assessment revealed that many municipalities were in deep trouble. With reference to Figure 1, the assessment found that water services provision in 23 municipalities – 9% of the total - was in a crisis state, with an acute risk of disease outbreak. A further 99 municipalities, or 38%, were at high risk, with the potential to deteriorate into a state of crisis. Importantly it was noted that chronic delivery weaknesses were tipping into outright service emergencies in a growing number of municipalities (DWA 2010a).

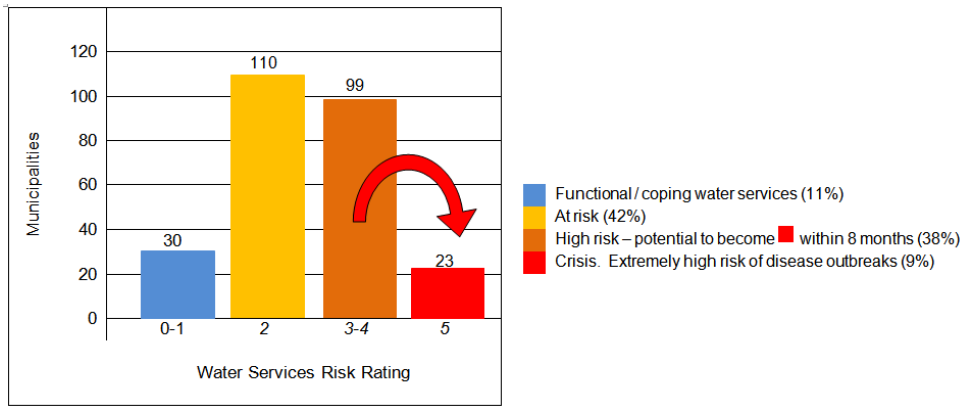


Figure 1: Risk Rating of Water Services Provision by Local Government Municipalities

The list of municipalities at risk or high risk includes the full spectrum of municipal categories, from two of the largest metros to some smaller cities, with the most widespread problems found in municipalities comprising small towns.

2.2 Past Progress with Municipal Drinking Water and Wastewater Management

The provision of safe drinking-water and effective sanitation are considered the most important determinants of public health. In recent years, South Africa has taken special efforts and made significant progress in the area of municipal water quality management. Summarised detail of some key initiatives follows.

2.2.1 National Deployment of the Municipal Water Quality Management Tool (eWQMS)

Whilst there has been considerable success in addressing water services backlogs throughout the new democratic South Africa, surveys by DWA during the mid-1990's showed that drinking-water quality in non-metropolitan areas remained unacceptably poor. Very few of the responsible WSA's (or designated municipalities) had satisfactory drinking-water quality monitoring programmes in place and even fewer utilised the data as intended. In particular, it was evident that a need existed for a drinking-water quality data capture and information dissemination tool, which could both assist WSAs to meet their responsibilities, and meet the Department's needs to monitor and regulate the operation of WSAs. Consequently DWA, together with the Institute of Municipal Engineering of Southern Africa (IMESA) and Emanti Management (Pty) Ltd, rolled out a web-based Water Quality Management System (eWQMS) to all 166 WSAs (Stevens et al, 2008).

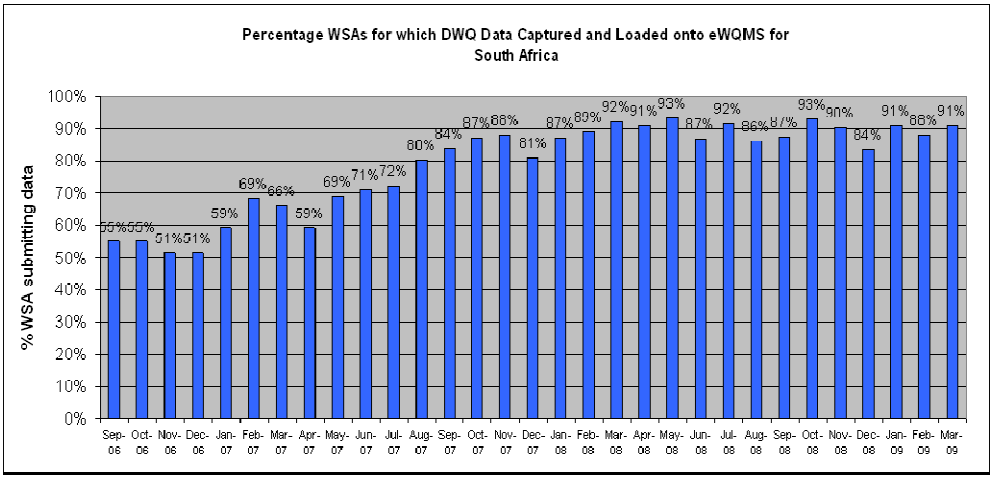


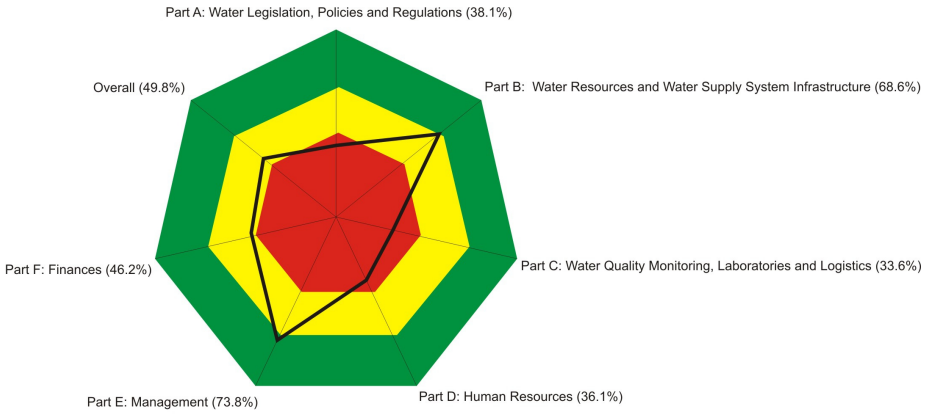
Figure 2: WSAs in South Africa loading drinking-water quality data onto the eWQMS on a monthly basis (the period September 2006 to March 2009)

2.2.2 National Deployment of Municipal Strategic Self Assessment by Local Government of Local Government's Capacity to Implement Sustainable Water Quality Management

The Municipal Strategic Self-Assessment (MuSSA) survey is undertaken annually, and in its original format measures each WSAs risk profile as regards sustainable water quality management via assessing the six key sustainability aspects thereof: (1) Water Legislation, Policies and Regulations; (2) Water Resources and Water System Infrastructure; (3) Water Quality Monitoring, Laboratories and Logistics; (4) Human Resources; (5) Management; and (6) Finances.

The outputs of the municipal self-assessments are presented to individual municipalities in easy to use colour coded "Spider Diagrams" indicating clearly the risk/vlunerability status of each "Leg of Sustainable WQM".

These simple “spider diagram” summaries have been found to be particularly effective in assisting technical and management staff to convey to non-technical, elected municipal councillors those areas of the municipalites operation requiring their prioritised attention and assistance. The overall score for the municipality is used as an indicator of the level of intervention that is required by Regional and National government. Use of MuSSA has been found to have played an important role in assisting South Africa’s initiatives regarding improved municipal water quality management.



Category Score	*Characterisation*	*Comment*
>70% - 100%	*Acceptable*	*No/minor intervention required*
>45% - 70%	*Marginal*	*Interventions required*
0% - 45%	*Poor*	*External support & intervention required*

Figure 3: Example of a “spider diagram” municipal self-assessment output, highlighting the municipal water quality management risk profile

2.2.3 Incentive Based Regulatory Approach: Drinking Water Quality

Incentive based drinking water regulatory assessments, the so-called Blue Drop assessments, started in late 2008/early 2009 with 66% of municipalities participating, whilst the second round of assessments occurred in 2009/2010 with 94% of municipalities participating (DWA, 2009a). Data and information from the Blue Drop assessments are captured on the DWA internet based Drinking Water Quality Regulation System (or Blue Drop System (BDS)).

The Blue Drop certification criteria include: (1) Water safety planning, (2) Process control, maintenance and management skill, (3) Drinking water quality monitoring programme, (4) Drinking water sample analysis (credibility), (5) Submission of drinking water quality results, (6) Drinking water quality compliance, (7) Drinking water quality failure response management, (8) Publication of drinking water quality management performance and (9) Drinking water asset management (DWA, 2010).

2.2.4 Incentive Based Regulatory Approach: Waste Water Quality

The first round of incentive based regulatory assessments of waste water, the so-called Green Drop assessments, occurred simultaneously with the first round of Blue Drop assessments with 66% of Municipalities participating (DWA, 2009b).

The Green Drop certification criteria for the first round of assessments included the following categories: (1) Process control, maintenance and management skill, (2) Wastewater quality monitoring programme, (3) Wastewater sample analysis (credibility), (4) Submission of wastewater quality results, (5) Wastewater quality compliance, (6) Wastewater quality failure response management and (7) Wastewater treatment works capacity. In addition, a First Order Assessment of Municipal Wastewater Treatment Plants was also conducted. Key observations from these included that only 6 out of 166 WSAs managed to obtain Green Drop status, with 55% of participating systems scoring between 0 – 49% for the assessment. The assessments covered less than half of the 1,000 odd wastewater treatment systems of South Africa.

3. HARNESSING THE POWER OF MUNICIPAL STRATEGIC SELF-ASSESSMENTS

3.1 Past Use of Municipal Strategic Self-Assessments

South Africa has used a municipal strategic self-assessment (MuSSA) since 2005 to assist to understand, support and guide the status of municipal water quality management and related water services quality within WSAs. In support of the emerging Blue and Green Drop regulatory initiatives, the MuSSA has identified where threats to sustainable services provision remain, and the development of local, regional and national strategies regarding measures that are required to close these "sustainability gaps". Over the last 2 years very close to 100% participation was achieved – an almost unique achievement in terms of South African municipal participation in national government data and information collection.

The positive impact of the MuSSAs is that WSAs can assess their own performance, identify areas requiring corrective action, benchmark themselves against peers, and monitor their trends. Outputs are also rolled up into regional views which assist risk/vulnerability benchmarking between municipalities across each of South Africa's nine provincial regions. This assists in regional supportive interventions by provincial and national departments, both in terms of identifying most vulnerable municipalities and in addressing regional themes (see Figure 4 below).

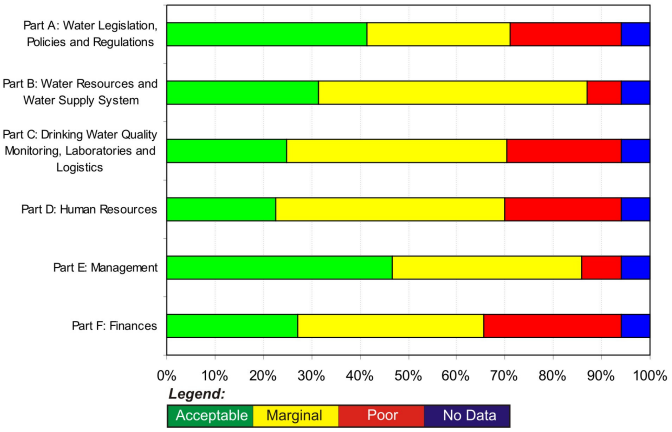


Figure 4: A typical rolled-up summary view of the six key performance areas per a regional province

Finally, outputs are rolled up into national views as per priority issues of the time, and used for national planning and business intelligence purposes (see Figure 5).

In this manner MuSSA outputs have been used as inputs into the high priority "Local Government Turnaround Strategy" in terms of (i) confirming high risk municipalities, and (ii), providing specific details on those areas of high risk within weak municipalities.

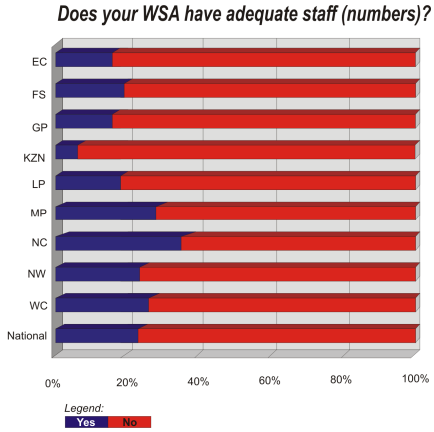


Figure 5: A typical rolled-up summary of the provincial perspectives for a specific query regarding technical staffing capacity

3.2 The Updated Need and Retaining the Value of MuSSA: Developing an Holistic Business Health Vulnerability Check

Although some modifications and enhancements have been made to MuSSA since its initial deployment in 2005, the MuSSA survey has largely remained unchanged for this 5 year period. Given sector progress over this period, and in particular given both (i) the improved municipal and water services regulatory information gathering processes, and (ii), the number of additional national water sector developments and associated revised needs which have developed (for example, increased focus on Asset Management, Water Demand Management, Integrated Water Management, Water Safety Planning, etc) an updated and revised approach was considered. A conventional SWOT analysis, see Table 1, resulted in a revised MuSSA being launched in 2010/2011.

STRENGTHS	WEAKNESSES
• Identify and communicates Key Issues hindering service delivery • Effectively communicates technical issues in non-technical terms to councillors • Allows benchmarking of municipalities against their own prior preference and other similar municipalities • Once populated it is easy to update ○ Immediately captures and reflects either positive or negative change	• Did not reflect the complete business health, but rather focussed on key issues of the time, i.e. WQM • Focussed on a mixture of “inputs, outputs and outcomes” • As the regional data capture strengthened, the tool became misaligned and the data set became superfluous • The level of detail required made the completion of the survey time consuming and laborious

○ No unnecessary repetitive answering of questions • Provided a lot of "live" strategic information as to the reason for municipalities struggling, especially since no other information was available at the time • High level of ongoing municipal participation	• The Municipal reaction to the Departments regulatory approach has diverted municipal attention from running an effective business to focussing on regulatory requirements
OPPORTUNITIES	**THREATS**
• Move away from a focus on business health to a focus on vulnerability and alignment with Local Government Turnaround Strategy • Offer strategic direction to LGTAS and development of specific Turnaround strategies • Provide a standardised perspective of that need • Offers proactive prediction of an impending crisis, i.e. worsening and where there is correction required	• Worsening municipal situation has resulted in municipal officials being very overloaded and experiencing difficulty in completing • Roles and responsibilities between sector departments, which is hampering service delivery • DWA, although the leader of the Water Sector, is not responsible for delivery of municipal services and therefore assessments may not be acted upon • Many small municipalities don't have skills to complete and then expert team support is needed.

Table 1: Local Government SWOT Analysis of Municipal Self-Assessment Survey Methodology

The new revised MuSSA seeks to focus more broadly on the overall "business status" of the municipality and in particular the "business health" thereof, so that areas of vulnerability to the sustainability of municipal water services provision can be readily identified. This quick and high level "vulnerability health check" seeks to facilitate and support the development of local, regional and national strategies and timeous actions relating to the measures that should be put in place to close these municipal performance "sustainability gaps". The updated MuSSA therefore compliments the regulatory based Blue Drop / Water Safety Plan oriented approach, by assisting municipalities, water services sector partners, and DWA to identify critical municipal areas requiring support.

The objectives of the revised approach include providing an educational tool and common language of communication between technical and non-technical municipal officials and office bearers while supporting and informing national regulatory needs, national sector planning needs, and monitoring and benchmarking of sector performance.

The revised MuSSA is a simpler, more easily answered survey with "essence" questions (5 questions per topic) with a substantial (70%) reduction in number of questions. it is more quickly updated and easier to complete. There is no repetition of data, and it is more municipal management friendly providing strategic flags (vs. deep technical detail, which is now captured elsewhere). The revised MuSSA considers "Business Health" and provides improved strategic insight. Sixteen vulnerability

indicators for the health and sustainability of the municipal water services business were developed in consultation with key stakeholders, namely: (1) Water Services Development Planning, (2) Management Skill Level, (3) Staff Skill Levels, (4) Technical Staff Capacity, (5) Water Resource Management, (6) Water Conservation and Demand Management, (7) Drinking Water Safety and Blue Drop Status, (8) Wastewater/Environmental Safety and Green Drop Status, (9) Infrastructure Asset Management (10) Operation and Maintenance of Assets, (11) Financial Management, (12) Revenue Collection, (13) Information Management, (14) Organisational Performance, (15) Water Service Quality and (16) Customer Care.

3.4 Preliminary Outputs to Updated MuSSA Survey

The survey is substantially easier to complete, taking less than an hour to obtain a strategic oversight of key vulnerability issues within the municipality. Based on the response, a vulnerability level per category is calculated and the results are displayed via a “spider diagram”.

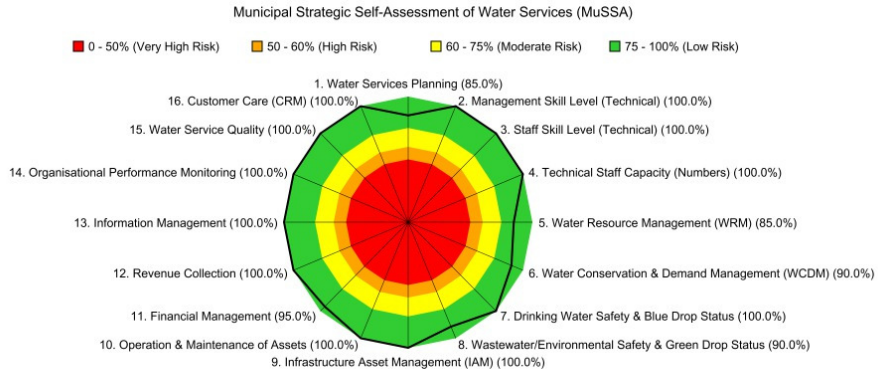


Figure 6: Typical updated MuSSA output indicating vulnerability (Metropolitan Municipality)

The above figure shows the results from a leading South African metropolitan municipality and confirms the current status of water services. In contrast, the figure below shows the results from a municipality that has suffered political turbulence and staff losses over the last number of years. The negative impact thereof is clearly evident in the results.

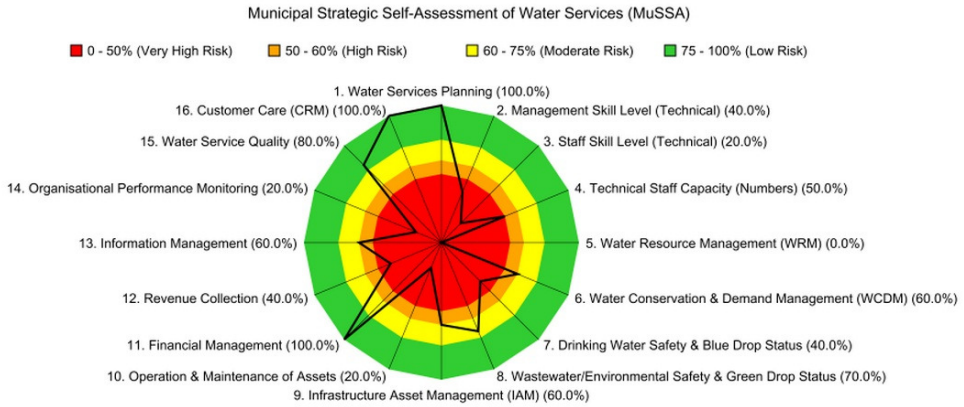


Figure 7: Typical updated MuSSA output indicating vulnerability (Local Municipality)

4. CONCLUSIONS AND WAY FORWARD

The 2011 MuSSA started in January 2011 and by mid-March 2011 had been completed by some 142 of South Africa's 166 (i.e. ~86%) municipal Water Services Authorities (WSAs). Municipal interaction has been through the Municipal Technical Manager and/or Water Services Manager. Initial feedback has been positive, with statements like "MuSSA immediately helps me to focus on where my key issues of concern are", "MuSSA correctly confirmed my municipality's greatest areas of technical vulnerability" and "vulnerabilities are immediately evident and can be addressed in a prioritised manner". These statements and other feedback have confirmed the effectiveness and value of the revised MuSSA as a municipal self-assessment, management and development tool to help WSAs identify their business development gaps and vulnerabilities arising there from.

Besides municipalities obtaining immediate on-line feedback of their MuSSA status, following the national completion of the MuSSA survey (envisioned end March 2011) all data will be collated and analysed for all 9 provinces in South Africa. Automated eWQMS based analysis will be used to generate National and Provincial MuSSA status reports. In so doing the MuSSA will contribute towards benchmarking local government performance against local, regional and national established standards; and informing regional and national policy-makers on the state of local government Water Services Delivery Business Health. Importantly, the MuSSA will contribute significantly towards South Africa's Local Government Turn-Around Strategy and should form the basis of any anticipated intervention and turnaround actions at municipal level, whether from a "quick win" or long term sustainability perspective.

5. REFERENCES

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