COMPARISON OF THE MUNICIPAL STRATEGIC SELF-ASSESSMENT AND THE OECD WATER GOVERNANCE INDICATOR FRAMEWORK AS TOOLS FOR LEARNING AND ONGOING IMPROVEMENT IN WATER SERVICES DELIVERY

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WATER RESEARCH COMMISSION

TT 816/20

Comparison of the Municipal Strategic Self-Assessment and the OECD Water Governance Indicator Framework as tools for learning and ongoing improvement in water services delivery

A report for the

Water Research Commission

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WRC Report No. TT 816/20

April 2020

BHI 32 (Pty) Ltd

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The publication of this report emanated from Water Research Commission (WRC) research project, titled "An evaluation of the OECD Water Governance Indicator Framework and MuSSA as tools to promote dialogue, self-assessment and learning in the South African local government context''. (WRC Project No K5/2935/1&2)

MuSSA icons on the report cover are provided courtesy of Emanti Management.

ISBN 978-0-6392-0134-4

Executive summary

Organisational performance assessments

In all sectors of society, organisational performance assessments in different formats are used to determine how well an organisation or even a country is doing. Is it financially healthy? What is the quality of its services? The results of performance assessments are typically shared as statistics and depicted in charts and described in reports.

The Auditor-General of South Africa's report is an example of how the results of an organisational performance assessment is shared. In June 2019, the Auditor-General's offices reported that, of the 257 municipalities and 21 municipal entities audited for the 2017-18 financial year, the audit outcomes of 63 regressed while those of 22 improved. The report further noted that 48% had no policy or an approved policy on water maintenance; for sanitation maintenance the figure was 49%.

Challenges in water and sanitation services are also highlighted in performance assessments of other Sub-Saharan countries, as the statistics of the World Health Organisation (WHO) reflect. In 2017, WHO reported that, despite significant improvements in the past ten years, more than half of the 144 million people who still collected water directly from rivers, lakes and ponds lived in Sub-Saharan Africa; only 18% of the people in Sub-Saharan countries used safely managed sanitation services.

The elusive solution

As improvement is the drive behind performance assessments, the next question is always: what can be done to improve, and achieve the desired results? Applied to the water and sanitation services example above: What would be a workable mechanism to improve water and sanitation services in South Africa, in Sub-Saharan Africa and also in other developing regions, in such a way that the Sustainable Development Goals for 2030 are met? And how should this mechanism be implemented to ensure that there is no regression over time, but that improvements are sustained?

Unfortunately, there is no simple answer to these questions.

Self-improvement, based on self-assessment and a self-developed action plan, has been proposed in the water sector, internationally and locally, as a mechanism to address unsatisfactory performance in water and sanitation services.

The OECD Water Governance Indicator Framework and the Municipal Strategic Self-Assessment tool

The Water Governance Indicator Framework (WGIF) of the Organisation for Economic and Cooperative Development (OECD) is a tool to facilitate self-improvement. The Municipal Strategic Self-Assessment tool (MuSSA), which was developed by the Department of Water and Sanitation for Water Services Authorities (WSAs) is a local counterpart.

This study analysed the OECD WGIF and the MuSSA tools to gain insight into how they compare and how they are applied to facilitate self-improvement through an action plan. For the MuSSA tool, the desktop analysis was supplemented with primary research in the form of on-site qualitative interviews with officials from 10 WSAs.

The OECD WGIF is designed to be applied by participants of inclusive stakeholder workshops at different scales. At the relevant scale, participants assess the state of play of their water governance in terms of the existing policy frameworks, institutions and monitoring and evaluation instruments. A set of indicator statements and checklist questions guide them through this exercise. Based on the findings of the self-assessment, which are depicted in spider charts and expected improvement charts, stakeholders are tasked to develop an action plan with designated roles and responsibilities, and a time frame.

MuSSA, on the other hand, has a dual function. It is designed for internal use at local government level by WSAs, but it is also used as a performance monitoring tool by DWS and its sector partners. Each year, municipal officials assess the business health of the water and sanitation services in their WSA in terms of 18 Business Health Attributes. Five statements for each attribute, plus a set of contextual statements guide them through the self-assessment. Once they have submitted their responses to the Department, the WSA receives a report with a spider chart that reflects their vulnerability (expressed as a percentage) for each attribute plus an overall vulnerability index (expressed as a number). WSAs are encouraged to develop a Municipal Priority Action Plan, based on the report findings.

The challenge: turning diagnosis into action that delivers better results

Both mechanisms envisage an action plan as the first step to turn diagnosis into action. Both have had disappointing outcomes in terms of the envisaged action plans.

The OECD WGIF was piloted in 2017 in two areas in Africa, in Kinshasa and in the Sebou Water basin in Morocco. According to the literature, the actions plans that the stakeholders developed were generic without clear roles and responsibilities or a time frame, i.e. not suitable for implementation.

Of the 144 WSAs that have participated in MuSSA since 2015, only 25 WSAs have submitted Municipal Priority Action Plans, which indicate that, in this context as well, participants find it difficult to transform self-assessment into concrete plans for improvement. Two of the 10 WSAs visited during the primary research of this study had action plans; in both WSAs, the development of the action plan was facilitated by DWS, it was not their own initiative. The two WSAs could not provide evidence that the action plans were implemented.

Key insights

The research identified several aspects that participants require from an organisational performance assessment to empower them to take systematic action towards improved water governance. Key insights from the desktop and primary research in this regard are the following:

1. **It must be easy for participants to engage with the instrument.** The study did a linguistic analysis of the indicator statements of the WGIF and the MuSSA Business Health Attributes, which included a readability analysis. Randomly selected statements were put through three readability tests: the Flesch-Kincaid Grade level, the Gunning Fog test and the Flesch Reading Ease test. The randomly selected statements from both tools were rated E (A is the most readable; F is the least readable). The unfavourable ratings are the result of long sentences, many technical terms and complex sentence structures.

   The OECD WGIF African pilots confirmed that participants found it difficult to engage with the indicator statements. Cognitive interviewing on the MuSSA statements revealed that respondents have different interpretations of the tested statements and response

categories. This has a negative impact on data integrity, which is particularly relevant for MuSSA as it is also used by DWS and its sector partners to compare WSAs' performance.

2. **Participants need a clear conceptual framework that they can relate to**. The two tools are underpinned by different conceptual frameworks. The OECD WGIF is grounded in the principles and pillars of good water governance as the concept is defined in the literature of development organisations. The concept of MuSSA originated from the American Water Works Association and was adapted for the South African legislative context and aligned with South African regulatory and planning instruments. The MuSSA calls itself a business health assessment. As such, it is grounded in the theory of business health and business excellence even though the conceptual framework is not explicit.

   The two conceptual frameworks, although different, have a drive for continuous improvement in common, as expressed in the business improvement cycle (Plan, Do, Check, Act). In the OECD WGIF, the business improvement cycle is called the Water Governance Cycle; the WGIF is mapped onto the Water Governance Cycle. The business improvement cycle is also underlying in the three indicator statements for each principle. Most business excellence models, which, in turn implicitly underpins MUSSA, link in some way to the business improvement cycle.

   The conceptual framework of both tools can be improved. The relationship between the pillars and principles of the OECD WGIF is not always evident. The mapping of the principles onto the Water Governance Cycle, which shows how the principles are applied in a business improvement cycle also have some problematic aspects. The underlying conceptual framework of MuSSA has been inferred; it is not made explicit in the MuSSA Guide that WSAs receive as part of the annual MuSSA communication. See Chapter 3 for the discussion.

3. **Participants need clear and comprehensive goals at their scale.** Where do we want our country, this catchment, this municipality, to be in terms of, for example, water and sanitation services? What are the results that we want to see? Safe drinking water, an uninterrupted water supply, no raw sewage running down streets, etc. Only if participants agree on the goals, can they meaningfully discuss and assess where and how are they coming short currently.

   In the OCED WGIF, the assessment checks if principles have been applied, but for participants to develop an action plan, they need to understand how the application of the principles delivers the desired results, and if not, why? Furthermore, results are central to the business improvement cycle: Plan, Do, Check, Act. In the mapping of the WGIF onto the Water Governance Cycle, results, which are both starting point and end goal, needs to be visible.

   The MuSSA tool requires participants to report on results such as regulatory compliance to drinking water and effluence standards, percentage water losses, financial performance, etc., but the bigger picture, how it all fits together in a chain of cause and effect, needs to be addressed. The research indicated that participants did not all understand how the statements fit together or what the ideal is for each business attribute, or for all of them together.

4. **The actions that participants need to take them from where they are to where they want to be must be evident**. The translation of the OECD WGIF indicator statements and even the checklist questions into practical actions that will deliver tangible and measurable results are not evident. The WGIF indicators are very high level and for a more meaningful discourse, they will probably need to be translated for the level of governance and the particular water function (such as water services) where they are applied.

   For the MuSSA respondents, even though they are aware of their weak performing areas, it was not evident how their responses translated into those specific vulnerability scores. It was also not evident for all of them how they should take the vulnerability scores into specific actions. Some of them referred to the Green and Blue Drop programmes:

   > *The MuSSA report does not empower you to link the failure to specific action. It shows you where the failures are, but not what actions you should take. Whereas with the Green and Blue Drop reports, you would know exactly what actions to take.*

   Municipal officials, in especially weak performing municipalities, need clear standards for each business area and a checklist of small steps (eating an elephant one bite at a time) that they need to take to meet these standards. Clear norms and standards for all business areas will also assist municipal officials to harness the financial and other support that they need from Council and executive management.

   This is probably true for all levels of water governance.

5. The interviews with WSA officials added valuable insights:
   a. Overwhelming institutions with an array of overlapping and duplicating reporting tools and plans is counterproductive. Currently, municipalities are flooded with assessment tools and improvement plans, all in an attempt to improve service delivery. Only those with the biggest stick (or reward) are attended to in time and with energy. The rest fall on the wayside.
   b. The MuSSA instrument talks the language of the scale where it is applied. It is a strength of MuSSA that it uses the terminology of WSAs, because the respondents can relate to it.
   c. The ability to translate self-assessment into action is also a function of the maturity of the organisation. The research found that the more mature municipalities find it easier to see the value of self-assessment and also find it easier to translate findings into actions.
   d. Municipal officials do not understand the difference between vulnerability and risk. In less mature WSAs, risk-based decision-making is also immature. Some do not have a Risk Register; in others, filling in the Risk Register is simply a compulsory routine exercise; it does not inform decision-making in a meaningful way. In practice, these WSAs do crises management, desperately trying to keep the pumps running and have water in the pipes.

Recommendations

The insights described above point the way forward. Chapter 6 gives recommendations on how the mentioned gaps in the OECD WGIF and MuSSA could be addressed and discusses opportunities for the two tools to learn from each other's strengths.

The two tools complement each other in focus: The OECD WGIF is generic for all scales and all water functions; the MuSSA is specific to local government and water services. Therefore, the specific recommendations for MuSSA that follow in the paragraphs below could also be useful for the application of the OECD WGIF at local and basin scale:

Consolidating reporting tools and plans to cut out overlap and duplication: One assessment tool for a WSA's water and sanitation business, one comprehensive report, one short-term action plan for the next financial year and one long-term action plan for the next five financial years, and one monitoring and evaluation tool that tracks improvement or regression over time for each business area are recommended. And all of these should be part of Council processes.

Revisiting the value that a risk-based approach adds in immature, struggling WSAs: A risk-based approach might be exacerbating struggling WSAs' narrow focus on crises (jumping from the one high-risk issue to the next) instead of working in a systematic manner towards positive results.

Rewarding good performance: Making good performance aspirational, something that municipalities and officials can be proud of and boast about could be a strong driver for behavioural change. In the digital age, apps (for example Kwit and Duolingo) are having success in changing behaviour or encouraging learning by rewarding users for small achievements. Several municipal officials interviewed referred to the Green and Blue Drop programmes and the value that incentive-based regulation added when the Drops were still active.

Putting the findings of MuSSA in the public space: It is the right of consumers to know how municipalities spend tax money and tariffs. Putting the MuSSA findings into the public space could also be used to leverage support from government, the private sector, community organisations, NGOs or donor organisations, even from capable individuals living in the municipal area. This will encourage multi-stakeholder involvement as reflected in the OECD's network model of water governance.

The way forward

This report does not suggest that the insights gained from the research or the recommendations above have found the ''elusive solution''. The solution probably lies in a combination of refining conceptual frameworks and performance assessment tools, and continuous engagement with stakeholders at different scales to understand their challenges and meet their practical needs. This is an ongoing journey as the OECD literature aptly acknowledges: much still remains to be done to ensure that better governance takes us to better lives and water for all.

Acknowledgements

The project team would like to thank Mr John Dini for his guidance and valuable input, and Ms Penny Jaca for her administration of the project. We would also like to thank the participating Water Services Authorities for your time and the valuable information that you shared with us.

The following Reference Group members for their enthusiasm and their very useful contributions:

Mr John Dini	Water Research Commission (chairperson)
Mr Allestair Wensley	Department of Water and Sanitation
Mr Chris Schmidt	Department of Water and Sanitation
Dr Marlene van der Merwe-Botha	WaterGroup Holdings
Mr Grant Mackintosh & Mr Philip de Souza	Emanti
Mr Fortune Mabunda	Erwat
Ms Tshepiso Maja	Department of Public Works
Dr Sabine Stuart-Hill	University of KwaZulu-Natal

Our co-researchers for their dedication and excellent work:

Ms Lulama Dlamini

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List of acronyms

AG	Auditor-General
BTO	Budget and Treasury Office
CAPEX	Capital expenses
CASM	Cognitive Aspects of Survey Methodology
CFO	Chief Financial Officer
CoGTA	Department of Cooperative Governance and Traditional Affairs
d	day
DM	District Municipality
DWS	Department of Water and Sanitation
EFQM	European Foundation of Quality Management
GDP	Gross Domestic Product
HR	Human Resources
IDP	Integrated Development Plan
IMF	International Monetary Fund
IPMS	Individual Performance Management System
IT	Information Technology
ITC	International Trade Centre
IWRM	Integrated Water Resource Management
KPA	Key Performance Area
KPI	Key Performance Indicator
LM	Local Municipality
M&E	Monitoring and Evaluation
MD	Managing Director
MEC	Member of Executive Committee
MISA	Municipal Infrastructure Support Agency
ML	megalitre
MM	Municipal Manager
MPAP	Municipal Priority Action Plan
MTSF	Medium Term Strategic Framework
MuSSA	Municipal Strategic Self-Assessment
NDP	National Development Plan
NGO	Non-governmental organisation
NT	National Treasury
O&M	Operation and Maintenance
OECD	Organisation for Economic Co-operation and Development
OPEX	Operational expenses
PDCA	Plan Do Check Act
PDSA	Plan Do Study Act
SANAS	South African National Accreditation System
SDBIP	Service Delivery and Budget Implementation Plan
SDF	Spatial Development Framework
UN	United Nations
UNDESA	United Nations Department of Economic and Social Affairs
VIP	Ventilated Improved Pit
W_2RAP	Wastewater Risk Abatement Plan
WC	Water Conservation

WDM&C	Water Demand Management
WGIF	Water Governance Indicator Framework
WRM	Water Resource Management
WSA	Water Services Authority
WSDP	Water Services Development Plan
WSP	Water Services Provider
WTP	Water Treatment Plant
WTW	Water Treatment Works
WVA	Water Vulnerability Assessment
WWTP	Wastewater Treatment Plant
WWTW	Wastewater Treatment Works

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Chapter 1: Background

The document is the final report of WRC project (K5/2935/1&2) “An evaluation of the OECD Water Governance Indicator Framework and MuSSA as tools to promote dialogue, self-assessment and learning in the South African local government context".

1.1 INTRODUCTION

The OECD[1] Water Governance Indicator Framework (WGIF) (OECD, 2018) was developed with the aim to support the implementation of the OECD Principles on Water Governance (OECD, 2015). These 12 principles comprise what is described as "must-haves for efficient, effective and inclusive water governance" (OECD, 2015). Each principle is associated with three indicators and a checklist.

The OECD WGIF is described as "a voluntary self-assessment tool to assess the state of play of water governance policy frameworks (what), institutions (who) and instruments (how), and their needed improvements over time. It is intended to be applicable across governance scales (local, basin, national, etc.) and water functions (water resources management, water services provisioning and water disaster risk reduction)" (OECD, 2018).

The OECD recognises that "much still remains to be done to propose a comprehensive framework for assessing water governance, the tools herein provided are a first concrete achievement that can significantly contribute to the development of better water policies for better lives" (OECD, 2018).

In South Africa, the Municipal Strategic Self-Assessment (MuSSA) tool was developed independently of the OECD WGIF, although it has a similar aim. The MuSSA tool is focused on local government. It comprises an annual process that involves 144 municipal Water Service Authorities (WSAs). The Department of Water and Sanitation (DWS) is the custodian of MuSSA and the process is also managed and facilitated by the Department. In addition to its self-improvement function, MuSSA is also used by DWS and its sector partners to monitor institutional performance in the local government water sector in South Africa.

There has not been a formal evaluation of the MuSSA tool.

1.2 THE AIMS OF THE STUDY

The aims of the study were the following:

1. To compare and evaluate the content and process of MuSSA and the OECD WGIF.
2. To analyse communication aspects of MuSSA and the OECD WGIF from a linguistic perspective and test how municipal water and sanitation officials understand and interpret communication that the analysis has identified as potentially problematic.
3. To synthesize the findings of Aims 1 and 2 into a set of recommendations, based on reciprocal learnings, firstly, for the developers and facilitators of MuSSA, and, as a secondary aim, for the developers and facilitators of the OECD WGIF.

[1] Organisation for Economic Co-operation and Development

It was not the aim of the study to propose or test the OECD WGIF (principles, indicators and process) as a parallel or alternative framework to domestic tools (like MuSSA) already in place. It was the aim of the study to look critically at both tools through a process of overlaying, and to identify the potential for reciprocal learnings and improvement of each of these tools.

1.3 THE SCOPE OF THE STUDY

As the research team worked on the literature review, the scope of the study was extended to include an investigation into business excellence models and their relevance for both the OECD WGIF and MuSSA. The reasons for this extension are the following:

- The MuSSA tool assesses the business health of municipal water services. Diagnostic tools to assess business health presuppose some model of a ''healthy business'', which is the domain of business excellence models. Business excellence models are of value for a tool like MuSSA because they provide theoretical frameworks for the assessment.
- There is also a noteworthy synergy between business excellence models and water governance. Most business excellence models link in some way to the business improvement cycle (Plan, Do, Check, Act) (Moen & Norman, 2005). In the OECD literature, the WGIF is mapped onto the Water Governance Cycle, which could be called an interpretation of the business improvement cycle.

These synergies will be explored in the literature review (Chapter 2) and the analysis of the two tools (Chapter 3). As both tools have improvement as their goal, the business improvement cycle is central to the recommendations that are made in Chapter 6.

Chapter 2: Literature review

In the first section of Chapter 2, literature on organisational performance assessment in the public and private sectors is discussed. Against this background, the literature on the two performance assessment tools that are the subject of this study, namely the OECD WGIF and MuSSA, will then be reviewed.

2.1 PERFORMANCE ASSESSMENT OF ORGANISATIONS IN THE PUBLIC AND PRIVATE SECTORS

Most societies in the world are characterized by two distinct sectors: the public and the private (UNDESA, 2007). The distinction between the two sectors is often fuzzy with more and more overlap (Graham et al., 2003). In South Africa, water services fall in the domain of the public sector, but charges for water services, which is a form of sales, generate revenue for Water Services Authorities (WSAs). According to Stats SA (2018), sales of water and sanitation services generated, on average, 14,3% of municipal revenue.

Basic organisational performance principles apply to both public and private sector organisations. Performance assessments in different formats are used to determine how well an organisation or even a country is doing. The results of performance assessments are typically shared as statistics and depicted in charts and described in reports. For example, the Auditor-General's (AG) report on the state of water and sanitation services in South Africa.

There is a growing synergy between the public and private sector: public-private organisations; applying business principles to public organisations; adding social responsibility to business performance criteria, etc. As a result, one finds in the literature (EFQM, 2019; Argüden, 2010) different but overlapping theories and models for organisational performance assessment in the two sectors. The two assessment tools that will be discussed in this report are examples of this overlap.

2.1.1 ASSESSING PERFORMANCE IN THE PUBLIC SECTOR

The theory and practice of evaluating the performance of governments and other types of public sector organisations in developing countries have been mainly driven by external agents: donor organisations such as the Organisation for Economic and Cooperative Development (OECD), the World Bank and the International Monetary Fund (IMF), international monitoring organisations such as the United Nations (UN) agencies, private sector organisations such as Moody's or Forbes, and academics. For international donor organisations, adherence to certain performance standards is often a requirement for development aid, but it is also used to measure the impact of development aid. For transnational corporations, performance evaluations of public sector organisations guide decisions to invest in a particular country.

The concept of governance has been instrumental in this drive.

2.1.1.1 The concept of governance

The definitions of governance in the literature of development organisations such as the OECD and the World Bank focus mainly on the public sector:

> *Governance is the exercise of political, economic and administrative authority necessary to manage a nation's affairs. Within government, governance is the process by which public institutions conduct public affairs and manage public resources* (OECD, 2006)[2].

> *Governance is defined as the manner in which power is exercised in the management of a country's economic and social resources for development.* (World Bank, 1992).

The definition of governance has evolved since the 1990s (Tropp, 2007:21). Governance is currently perceived and defined as a much broader concept that extends beyond the public sector (Bahrman et al., 2012) and involves a wide range of factors within society.

> *Governance comprises a wide variety of ways to solve common problems including organisational, social, national and international problems* (Newman, 2001).

> *Governance refers to the way a society sets and manages the rules that guide policy making and policy implementation* (UNDESA, 2007).

> *Governance is defined as the process of decision-making and the process by which decisions are implemented, monitored and evaluated* (Gianluca et al., 2011).

Kooiman (1993) views governance as "the forms in which public or private sectors engage in problem solving, not separately, but in conjunction with other actors in society", in other words, the actions of multiple organisations towards a common goal. For Asaduzzaman and Virtanen (2018), this view redefines the role of the state and represents the starting point of New Public Governance, which is a breakaway from the public sector management paradigm.

These definitions position governance at a strategic level, involving strategic decisions about who participates; how power relations are structured, horizontally or vertically; how management systems are organised, centralised or decentralised; and how decisions are made, accommodative or top-down.

Asaduzzaman and Virtanen (2018) observe in their review of academic literature on governance that there has not yet emerged a universally acceptable theory of governance.

> *The academic literature on governance is very diverse and incoherent. As a result, its theoretical roots are various such as institutional economics, international relations, organizational studies, development studies, political science, public administration, and Foucauldian-inspired theorists.*

Models and theories of governance are grounded in values such as efficiency, effectiveness, accountability, the rule of law, openness and inclusiveness. Gianluca et al. (2011) calls these "drivers of value". More recently, access to opportunity (e-governance) and decentralisation have been added as values that enhance participation and inclusiveness (UNDESA, 2007).

Although theories and models tend to refer to the same values, the interpretation of these values differ. We will come back to values or principles when we discuss the OECD Water Governance Indicator Framework (WGIF).

[2] https://stats.oecd.org/glossary/detail.asp?ID=7236

Tropp (2007) notes that concepts such as power relations tend to be quite esoteric and that ''governance is something very concrete that is often manifested in daily interactions between local public officials, citizens, communities and organisations. From the point of view of practitioners and private and public decision-makers, governance becomes more meaningful if it is linked to the common good or the resolution of common problems".

In the last decade of the 20th century, a school of thought developed that linked governance to outcome. The new term that reflected this thinking was "good governance'' (Asaduzzaman & Virtanen, 2018).

> *Good governance, for the World Bank, is synonymous with sound development management… Efficient and accountable management by the public sector and a predictable and transparent policy framework are critical to the efficiency of markets and governments, and hence to economic development* (World Bank, 1992).

Batchelor (2006) refers to Cleaver et al. (2006) who said that, despite the consensus that good governance should lead to good outcomes, it is not evident how this happens:

> *What do we mean by 'good water governance' and how can we be sure that 'good governance' leads to 'good outcomes'? There is, as yet, little understanding of the importance of localisation and contextualisation in how governance systems evolve, and how these result from precedent, the environment and local practice.*

2.1.1.2 The evaluation of good governance: indicators and indexes

The evaluation of good governance in the public sector can take place at different levels: globally, nationally and at local level (Lonti & Woods, 2008).

Good governance in public sector organisations is measured in terms of a set of indicators. Two types of indicators are typically used (UNDESA, 2007):

1. Indicators of the mentioned qualitative aspects of organisations and their processes, the three main ones being efficiency, transparency and participation.
2. Economic indicators, which can be regarded as indicators of outcomes or results.

Examples of indicators from the UNDESA report (2007) are given in Table 1 below. The last column indicates the scope of the focus:

Table 1: Examples of indicators of good governance

Types of indicators	Examples	Focus
Efficiency	Cost per service type	Narrow
	The average time to get a business licence	Broad
	Volatility in budgetary expenditure	Broad
Transparency	Regular financial audits of government organisations	Broad
Participation	Institutional mechanisms for regular consultations between local government and civil society	Narrow
	Proportion of total public revenues allocated and	Broad

Types of indicators	Examples	Focus
	managed at the subnational level	
Economic indicators	Central bank independence	Broad
	Savings as % of Gross Domestic Product (GDP)	Narrow
	Investment as % of GDP	Narrow
	Debt per capita	Narrow

For each of these indicators, data is collected. The UNDESA report (2007) distinguishes between a) objective data, that is quantifiable inputs or outputs, such as the savings as a % of GDP, the distribution of income, the number of houses built, basic services delivered, education levels, number of clinics and hospitals, etc.; and b) subjective data based on the perceptions of research participants.

The UNDESA report (2007) notes that both types have disadvantages. Objective data are often absent or of poor quality; subjective data reflect a particular perspective. Both types could be ideologically biased.

A further distinction is made between single indicators of good governance and aggregate indicators. Single indicators focus on a specific aspect of good governance, for example the World Bank's investment climate index. Aggregate indicators combine the data of single indicators into a composite index of good governance, for example, the Growth Competitive Index of the World Economic Forum, which comprises three sub-indices: macroeconomic environment index, the public institutions index, and the technology index (UNDESA, 2007). The UNDESA report (2007) cites Manning, Kraan and Malinska (2006) in their comment that an underlying acknowledged theoretical framework is often absent when single indicators are aggregated.

Future directions mentioned in the UNDESA report (2007) are:

- The distinction between core indicators and so-called 'satellite' indicators, or indicators that are specific to a country or a city; and
- Needs-based indicators which follow a bottom-up approach to identify what citizens regard as indicators of good governance.

Both indicator types are relevant for the comparison of the OECD WGIF and MuSSA.

2.1.2 Assessing performance in the private sector

The performance of private sector organisations is also measured in terms of quantifiable inputs and outputs and qualitative organisational aspects. The quantifiable outputs of sales and profits reflect the distinct driving force of private sector organisations.

2.1.2.1 The evaluation of business performance

In the business context, performance assessment is part of the monitoring and evaluation aspect of business improvement cycle, for which there are several models. The PDCA (Plan, Do, Check, Act) cycle is probably the most widely used.

The PDCA cycle was developed in the 1950s by the Japanese as an evolvement of the Deming Wheel. It was later reinvented by Deming and renamed as PDSA (Plan, Do, Study, Act) (Moen & Norman, 2005). The model is depicted in Figure 1 below.

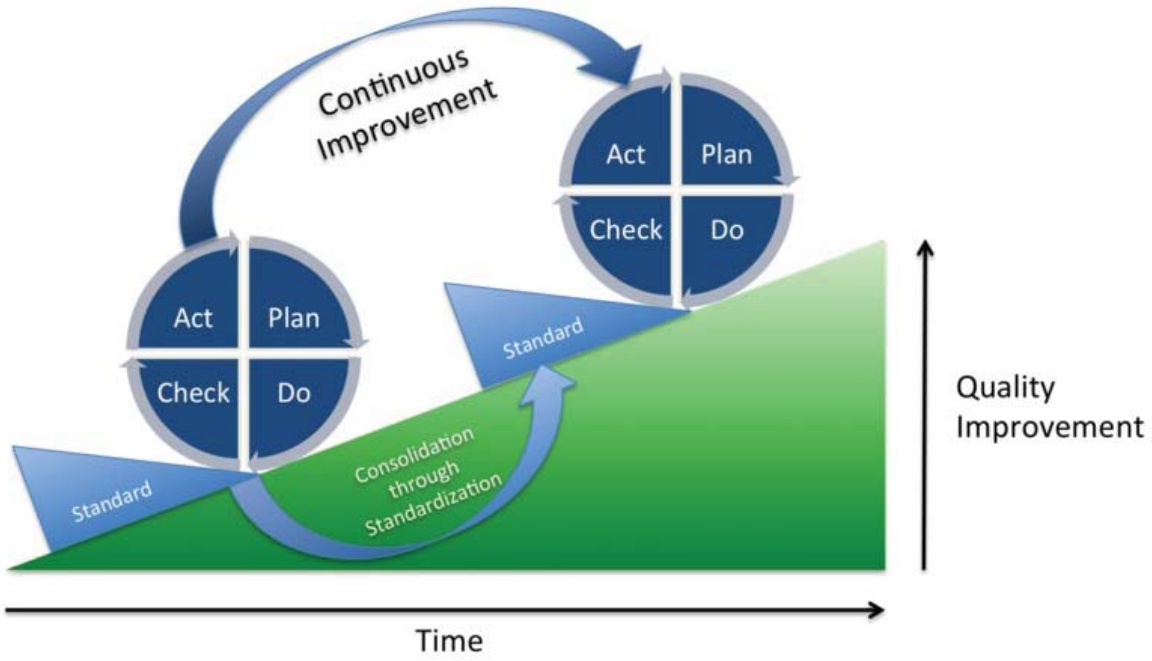


Figure 1: The PDCA cycle of continuous improvement[3]

The figure illustrates how performance assessment should trigger action to improve. It also illustrates that quality improvement implies **a set of standards** against which performance can be measured, and actions to improve can be planned and implemented.

Performance can be assessed through a process of self-assessment or contracting an external, independent assessor or auditor, such as an auditing firm. Most organisations use both methods.

Mann et al. (1999:6) explains why self-assessment has become increasingly popular: ''For a company to achieve long-term success, other measures, in addition to financial, are needed. It is only through applying a wide range of 'business excellence measures' that meet the needs of customers, employees, shareholders and other stakeholders such as the community at large that a company will begin to be able to assess its overall business health and therefore take steps to improve.''

In the two subsections below, we will discuss two types of methods to assess business performance: business excellence models and business health checks.

2.1.2.2 Business excellence models

Business excellence models essentially set standards (or criteria) for organisations against which they can measure their performance. The two business excellence models most widely used are the EFQM (European Foundation of Quality Management) Excellence Model, also referred to as the European Business Excellence Model (EFQM, 2012;2019), and the Malcolm Baldrige Excellence Framework (Malcolm Baldrige Excellence Program, 2010), which is widely used in the USA.

Both models underwent substantial development over the years, with criteria being added and revised. Both models are also promoted as diagnostic tools that organisations can use to learn and improve. The EFQM Model, for example, has its own diagnostic tool that it calls Radar. The models are also used to award organisations for business excellence, i.e. they are also used as a tool to benchmark and award business excellence.

[3] https://en.wikipedia.org/wiki/File:PDCA_Process.png

Although initially developed as excellence models for business performance, their application has been extended to measure the performance of organisations in the public sector. See Mohamed (2013) and George et al. (2003) for examples.

Both models are underpinned by fundamental values. Both models emphasise outcomes or results. The diagrams below outline the key components of the two models:

2.1.2.3 The EFQM business excellence model

The EFQM model has gone through several editions.

In the 2012 edition, fundamental values are called principles. The principles of the model are depicted in Figure 2 below:

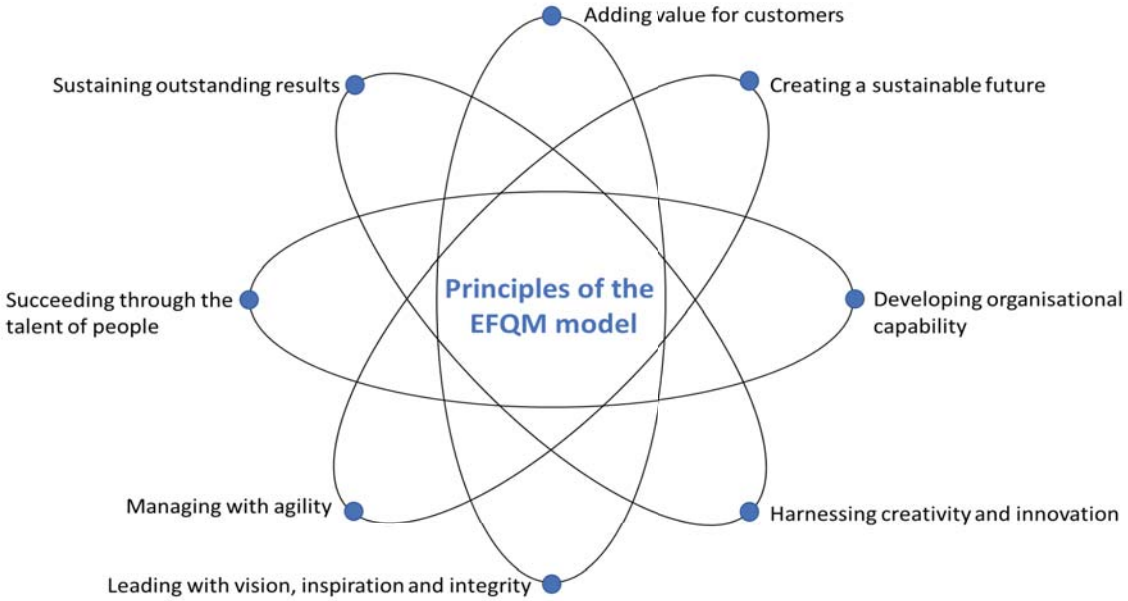


Figure 2: Principles of the EFQM model (EFQM, 2012)

Each principle is unpacked in a series of statements. This is supplemented by two sets of criteria, Enabler criteria and Results criteria. The Enabler criteria evaluate actions and processes; the Results criteria evaluate achievements in a dynamic learning cycle. Each Enabler criterion is unpacked in the form of statements and examples that further guide the assessment. Each Result criterion has a definition and performance indicators and measures.

Organisations can evaluate their performance through a self-assessment process or with the assistance of outside assessors as a score across the nine criteria (see Figure *3*) and against the 32 statements. The scoring uses a universal scoring and weighting system (Anderson et al., 2000).

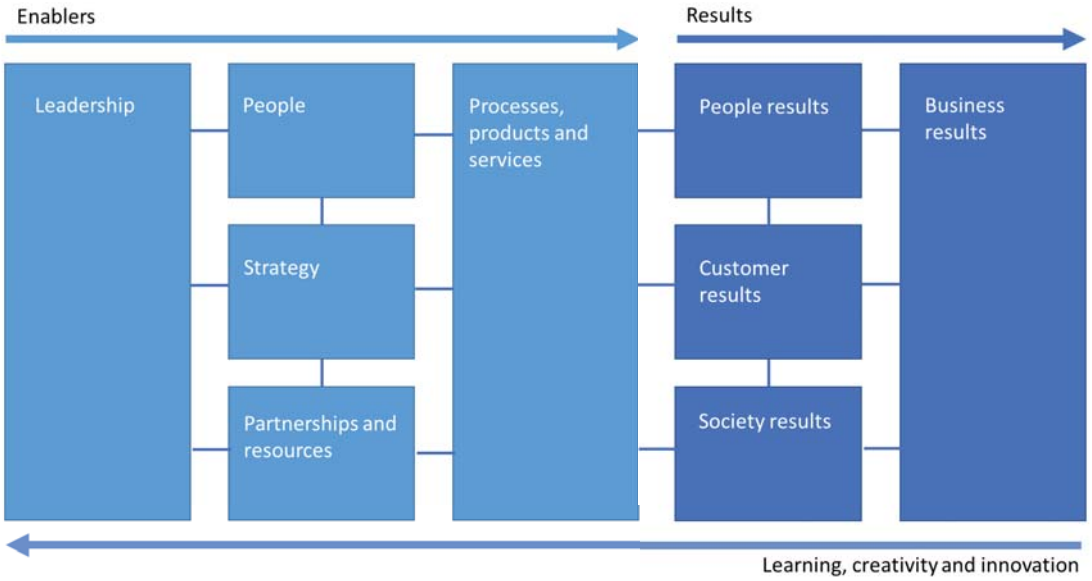


Figure 3: The nine EFQM criteria of business excellence (EFQM, 2012)

In 2019, the EFQM model was updated. The latest edition is simpler and more dynamic than the previous version as Figure 4 below shows:

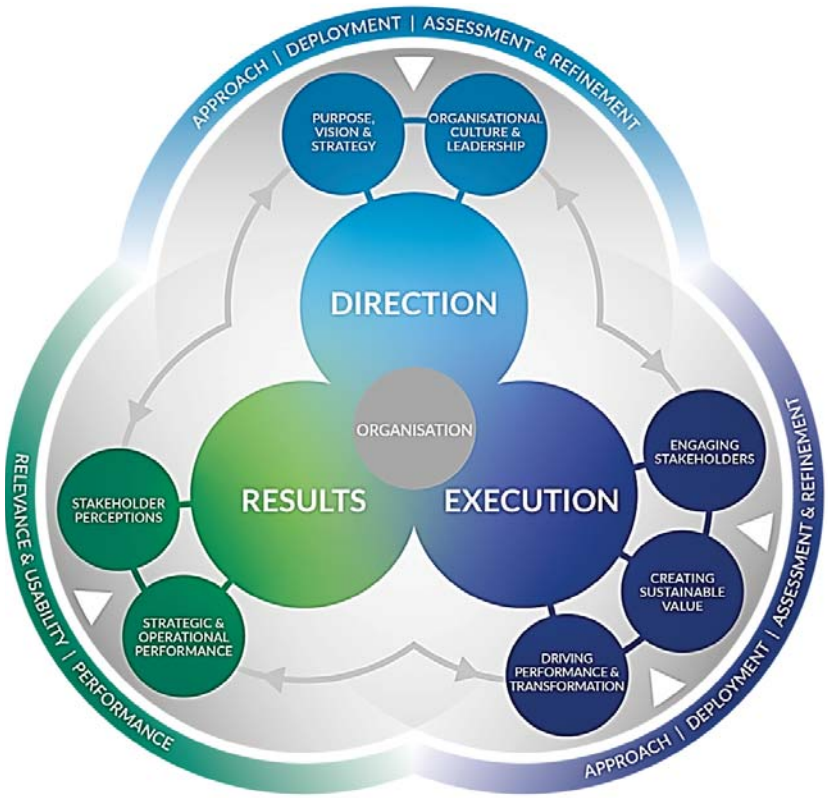


Figure 4: Updated EFQM model[4]

[4] Copied from https://www.efqm.org/index.php/efqm-model/

In the introduction of the 2019 edition (EFQM 2019), the principles of the model are described as:

- *The primacy of the customer;*
- *The need to take a long term, stakeholder-centric view;*
- *Understanding the cause and effect linkages between why an organisation does something; how it does it and what it achieves as a consequence of its actions.*

The 2019 edition is closer to the business improvement cycle (Moen & Norman, 2005) than previous editions, with its strong focus on results as the main difference. ''Check'' and ''Act'' are part of each aspect, but it is called ''assessment and refinement'' in Direction and Execution, and ''relevance & usability, and performance'' in Results.

Each aspect is associated with two or three criteria and each criterion is associated with a set of positioning statements (EFQM, 2019).

The 2019 version of the EFQM business excellence model is central to the recommendations of this report.

2.1.2.4 The Malcolm Baldrige model

The Malcolm Baldrige model is underpinned by the following core values and concepts: Visionary Leadership, Customer-Driven Excellence, Organizational and Personal Learning, Valuing Workforce and Partners, Agility, Focus on the Future, Managing for Innovation, Management by Fact, Societal Responsibility, Focus on Results and Creating Value.[5]

Criteria fall into seven categories that relate to similar key processes and systems as the EFQM: Leadership; strategic planning; customer focus; measurement, analysis and knowledge management; workforce focus; process management; and results. Each of the criteria is associated with a set of questions, of which the answers are used to score business excellence[6].

The Malcolm Baldrige model is a static model and it does not relate to the business improvement cycle. For this reason, it will not be used further in this report.

2.1.2.5 Business Health checks

Business Health checks are informal tools to assess organisational performance. Business health checks have been included here because the MuSSA tool calls itself an assessment of the health of a Water Services Authority's (WSA) water business.

Business health checks focus on diagnosis. They use similar, but less comprehensive diagnostic tools than the business excellence models and are often accompanied by an online version that a business can fill in to get a business health score.

ITC (2014) defines a business health check as:

a. a structured management framework tool;
b. assessing what an organisation does and the results it achieves;
c. identifying strengths and areas for improvement; and
d. providing opportunities to compare to and learn from other organisations.

[5] https://blog.hypeinnovation.com/the-baldrige-framework-in-pursuit-of-excellence
[6] http://www.businessexcellencetools.com/business-excellence/

Standards of business excellence are implicit in the criteria. Most business health checks have an underlying conceptual framework of the key elements of a business, called Business Diagnostics Frameworks. Business Diagnostics Frameworks are used to structure business health checks.

Figure 5 below is an example[7] of such a conceptual framework. It is interesting that key elements also feature in the OECD WGIF and the MuSSA tools, which illustrates the close relationship between good governance and business health.

Figure 5: Example of a Business Diagnostics Framework[8].

Each of the tiers is associated with critical elements (see footnote 7 for the reference):

- The vision for the business, objectives, strategies, and plans and the structure and culture to provide support for the strategies are the critical elements of strategic processes.
- Marketing, sales and business development, and production, operations & logistics are the critical elements of operational processes.
- Accounting, finance and cash flow, people and human resources (HR), physical assets and the procedure, systems and information required to organise everything are the critical elements of administrative processes.

Some business diagnostics frameworks do not only look at the internal environment; they also provide for the impact of the external environment, for example the political, economic, technological and socio-cultural environment and the competitor landscape.

Business health checks are what their name says: they focus on diagnosis and not on taking diagnosis into action to improve performance. For this reason, business health checks will not be used further in this report.

[7] Adapted from International Trade Centre (ITC). 2014. **A Guide to Diagnose a Business and its Management** (Technical paper) Doc. No. EC-14-241.E http://www.ceobusinessdiagnostics.com/business-diagnostic-framework/

[8] http://www.intracen.org/uploadedFiles/intracenorg/Content/Publications/AssetPDF/guidediagnost.pdf

2.1.3 TAKING PERFORMANCE ASSESSMENT INTO ACTION

It is the aim of an organisational performance assessment to improve performance. The organisation should therefore be able to take the findings into action, leading to improved results. This implies that participants in a self-assessment would be able to interpret assessment scores against a set of clear standards and subsequently develop an action plan to improve.

Anderson et al. (2000) notes in this regard that the criteria and scoring system of the earlier versions of the EFQM was complex and that the process was therefore often conducted by trained and experienced internal or external assessors. The translation from score to action for improvement was not self-evident. Anderson et al. (2000) quotes the EFQM (1999) itself in this regard:

...the process of Self-Assessment does not, of itself, improve the organisation… a key step in the process is to identify the "vital few" [areas of improvement relating to the organisation's strategy] …

From the above example and Tropp (2017), it was clear that organisations, especially those that are not mature, find the essential step of taking performance assessment to action the most difficult. In our analysis of the OECD WGIF and MuSSA, we will reflect on possible reasons for this.

2.2 THE OECD AND WATER GOVERNANCE

2.2.1 WHAT DOES WATER GOVERNANCE MEAN TO THE OECD?

The OECD (Organisation for Economic Co-operation and Development) defines water governance as "the set of administrative systems, with a core focus on formal institutions (laws, official policies) and informal institutions (power relations and practices), as well as organisational structures and their efficiency" (OECD, 2011:28).

The OECD distinguishes between water governance and water management (Romano & Akhmouch, 2019; OECD, 2016). For them, water management refers to operational activities, for instance water services delivery and water re-use. Water governance, on the other hand, is a much broader concept which is described as "a means to an end" (Romano & Akhmouch, 2019) that includes the range of actors and actions involved in making towns and cities better prepared for water-related disasters, and more resilient and inclusive when providing water services.

Rogers and Hall (2003) defines water governance in similar terms as "...the range of political, social, economic and administrative systems that are in place to develop and manage water resources, and the delivery of water services, at different levels of society".

However, in the practice of good water governance, the efficient implementation of systems to achieve results features strongly. This echoes the Word Bank's emphasis in its definition of governance.

Tropp (2007) refers in this regard to the 2000 Second World Water Forum held in the Hague as ''one of the first international water meetings that explicitly addressed governance as a main issue that must be addressed to deal effectively with shortages of water resources and services''. He goes on to mention international meetings, such as the 2001 Bonn International Conference on Freshwater, the 2002 World Summit on Sustainable Development in Johannesburg and the 2005 13th session of the Commission on Sustainable Development in New York, which have all considered improved governance as a requirement to the water-related Sustainable Development Goals (SDGs).

In these discussions, the emphasis has been on improving water governance to achieve particular goals. **This study will have the same emphasis: What are the indicators of good water governance? And, how can water governance be improved to solve water challenges and respond to local needs?**

Romano and Akhmouch (2019) refers to three models of urban water governance: Hierarchical, Market and the Network. The main characteristics of the three models are summarised in Table 2 below:

Table 2: Three models of urban water governance

Hierarchical model	Market model	Network model
Top-down decision making Centralised public authorities Vertical accountability Poor stakeholder engagement	Greater empowerment of stakeholders for water management and ownership of water assets (privatisation, corporatisation, private-public partnerships)	Co-operation of private, civil and public actors Decentralised management

The OECD literature (2015, 2018) leans towards a network model and advocates the co-operation between all stakeholders in water governance as the quote below illustrates:

> *Coping with current and future challenges requires robust public policies, targeting measurable objectives in pre-determined time-schedules at the appropriate scale, relying on a clear assignment of duties across responsible authorities and subject to regular monitoring and evaluation.*
>
> *Water governance can greatly contribute to the design and implementation of such policies, in a shared responsibility across levels of government, civil society, business and the broader range of stakeholders who have an important role to play alongside policymakers to reap the economic, social and environmental benefits of good water governance (OECD, 2015:4).*

Romano and Akhmouch (2019) note though that, in practice, water governance is usually some hybrid of the three models.

2.2.2 WATER GOVERNANCE FROM THE PERSPECTIVE OF THE OECD

The OECD has stated in several publications (2015, 2018) that water governance is a worldwide challenge where all countries have to 'do more with less':

The organisation's vision of what needs to be done is captured in the following quote:

> *Coping with future water challenges raises not only the question of "what to do?" but also "who does what?", "why?", "at which level of government?" and "how?" Policy responses will only be viable if they are coherent, if stakeholders are properly engaged, if well-designed regulatory frameworks are in place, if there is adequate and accessible information, and if there is sufficient capacity, integrity and transparency (OECD, 2015:1).*

The approach that the OECD follows to address governance challenges is essentially a gap analysis. The name of the organisation's first multi-level analytical framework developed in 2010 to address governance challenges reflects this approach: 'Mind the Gap, Bridge the Gap' (OECD, 2011). This

framework was used to review water governance arrangements in 17 OECD countries and 13 Latin American countries (Akhmouch, 2016:14).

2.2.3 OECD Principles on Water Governance

Building on the multi-level analytical framework, the OECD developed a framework to support countries to meet water challenges, called the OECD Principles on Water Governance (OECD, 2015).

2.2.3.1 Rationale and purpose

According to the OECD (2015), robust public policies are required to cope with current and future water challenges. Furthermore, the OECD believes that: "*Water governance can greatly contribute to the design and implementation of such policies, in a shared responsibility across levels of government, civil society, business and the broader range of stakeholders who have an important role to play alongside policy-makers to reap the economic, social and environmental benefits of good water governance*" (OECD, 2015:3).

The OECD Principles on Water Governance therefore aims to contribute to tangible and outcome-oriented public policies, based on three mutually reinforcing and complementary dimensions of water governance.

2.2.3.2 Pillars and Principles

The principles are underpinned by three pillars: efficiency, effectiveness and inclusivity (trust and engagement). Each pillar is associated with four principles. The 12 principles comprise what is described as "must-haves for efficient, effective and inclusive water governance" (OECD, 2015).

The pillars and principles are depicted in Figure 6 below:

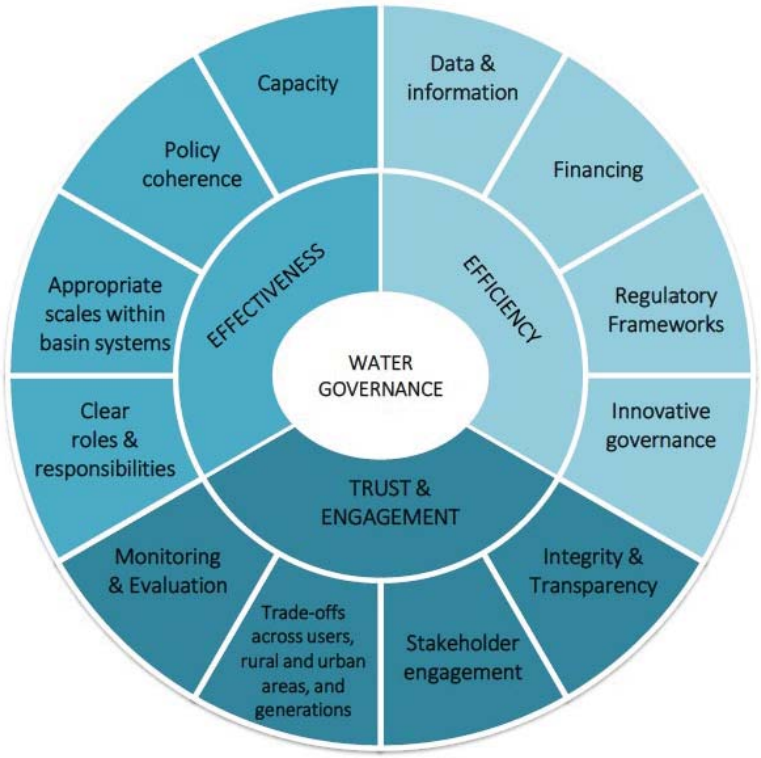


Figure 6: The OECD Water Governance Pillars and Principles (OECD, 2015)

2.2.4 The Water Governance Indicator Framework (WGIF)

In 2016, the OECD published the results of a survey carried out in 48 cities from OECD and non-OECD countries (OECD, 2016). The survey highlighted several water governance gaps. The OECD, together with experts from a range of sectors, developed the OECD Water Governance Indicator Framework (WGIF) to support governments to address these gaps at all scales by taking the pillars and principles into practice (Romano & Akhmouch, 2019; OECD, 2018).

2.2.4.1 Purpose

This project was developed through a multi-stakeholder engagement process by the OECD Centre for Entrepreneurship, Small and Medium-sized Enterprises, Regions and Cities as part of the 2017-18 programme of work of the Regional Development Policy Committee (OECD, 2018:5). For each principle, three indicators (12 x 3 = 36 in total) were developed.

The OECD Water Governance Indicator Framework (WGIF) is described as "a voluntary self-assessment tool to assess the state of play of water governance policy frameworks (what), institutions (who) and instruments (how), and their needed improvements over time". The WGIF can be applied across governance levels (local, basin, national, transboundary) and across water functions (water resources management, water services provisioning and water disaster risk reduction) (OECD, 2018).

Its primary objective is stated as "to stimulate a transparent, neutral, open, inclusive and forward-looking **dialogue across stakeholders** on what works, what does not, what should be improved and who can do what" (OECD, 2018:18).

It is based on **a bottom-up and multi-stakeholder approach** rather than a reporting, monitoring or benchmarking perspective, because it is argued that governance responses to common water challenges are highly contextual and localised (OECD, 2018:18).

2.2.4.2 Indicators and checklist

The WGIF comprises a traffic light system of 36 water governance indicators and a checklist of about 100 questions on water governance. See Appendix 1 for the indicator statements and checklists associated with each principle. The assessment is complemented by an Action Plan on how the water governance system can be improved in the short, medium and long run. Figure 7 below summarises the structure of the Indicator Framework:

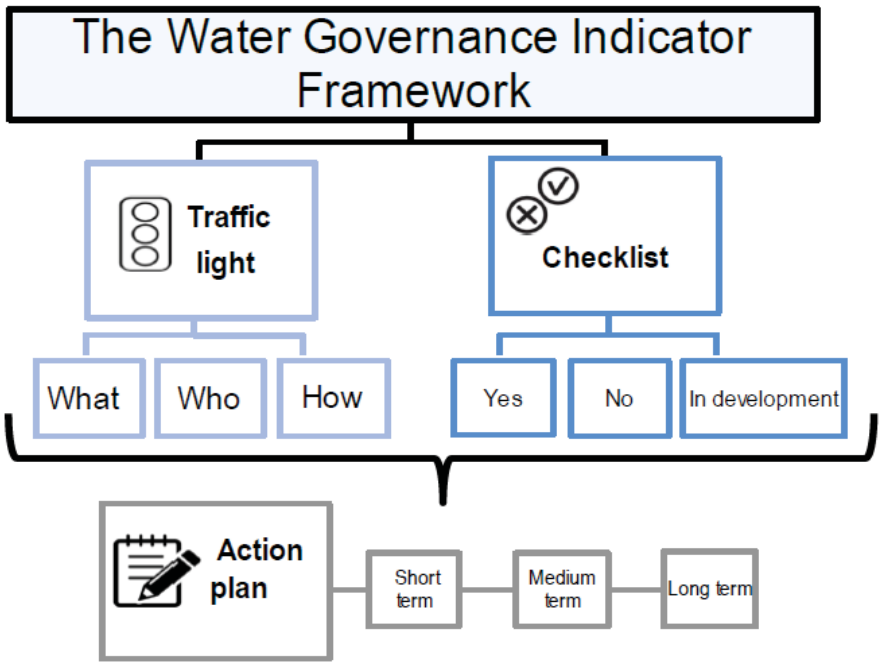


Figure 7: The OECD Water Governance Indicator Framework (OECD, 2018)

The three indicators are used to assess the current situation for each principle in terms of the policy framework (What?), the institutions (Who?) and the instruments (How?).

Stakeholders must decide which traffic light colour most accurately reflects the current situation for each of the three indicators and they must provide evidence in the form of notes:

Traffic light baseline					
In place, functioning	In place, partly implemented	In place, not implemented	Framework under development	Not in place	Not applicable

For each indicator, participants must indicate their level of consensus on assessing the current situation:

Results of stakeholder consultation		
Strong consensus: 💧💧💧	Acceptable consensus: 💧💧	Weak consensus: 💧

Finally, they must indicate the progress on each indicator that they expect after three years.

Expected progress (three years after the baseline)		
Improvement: ↗	Stable: =	Decrease: ↘

The results of this process are visualised in two sets of charts as set out in Figure 8 below:

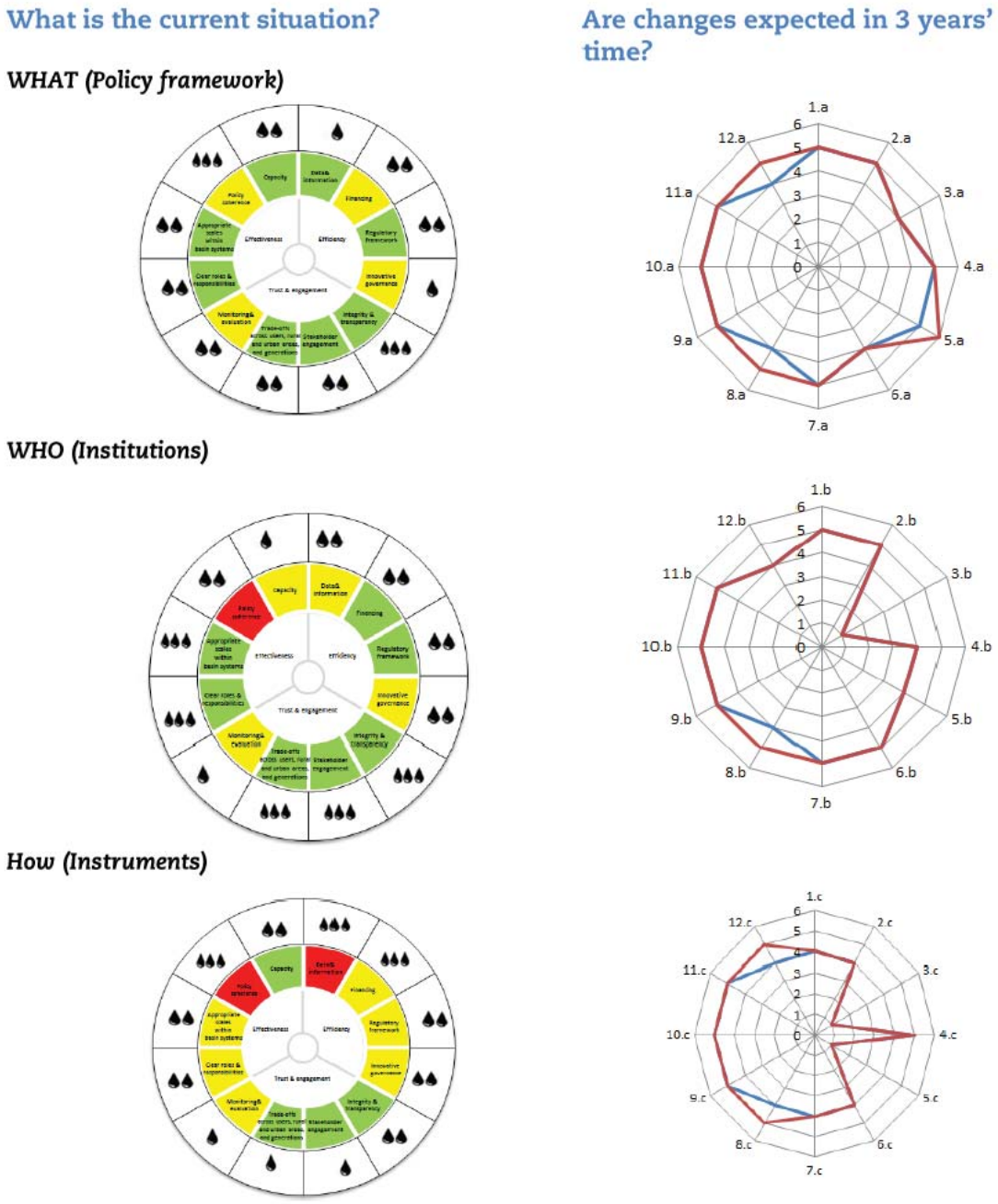


Figure 8: A visualisation of the traffic light system (OECD, 2018)

The numbers in the spider charts refer to the principles. The secondary numbers (a, b and c) refer to the assessment on the three indicators (What, Who and How) respectively. The blue line depicts the current status and the red line depicts the expected progress or decline in three years' time.

Notes:

1. The colours of the traffic lights correspond with risk colours. Green is good; red is bad.
2. In the spider charts, red has no negative connotation; it simply indicates an assessment in three years' time.

3. The position of the principles on the circles do not match. For example, Principle 1 sits at 8 o'clock on the traffic lights; on the spider charts it sits at 12 o'clock.

A checklist of questions was added to guide participants in the debate on the implementation of each Principle. The checklist requires participants to reflect on a number of additional governance conditions, which feature in the checklist (OECD, 2018:67). Figure 9 below is an extract from a completed checklist:

Principle 12: Monitoring and evaluation		
Do formal requirements exist for evaluation and monitoring?	✓	National water strategy
Are there agreed-upon key performance indicators?	✓	Rate of drink water access and rate of connection to sanitation network in urban and rural areas
Do monitoring and reporting mechanisms exist?	✗	Report on water sector achieved by the economic social environmental council
Are there provisions or incentives for civil society monitoring?	✓	Minimum quota for representativeness of NGOs in Basin Council
Are there financial resources available to train civil society organisations in project monitoring?	⚙	Training programs for NGOs developed and financial support for NGOs to reinforce the capacities of the members

Figure 9: Extract from a completed checklist (OECD, 2018)

As is the case with the indicators, the questions correspond to one of the 12 principles. Participants can answer 'yes', 'no', 'in development', or 'not applicable'. They are also required to provide sources or references as supporting evidence of their assessment.

The OECD literature explains the objective of the checklist as follows:

> *It was recognised that a debate on the implementation of each Principle cannot be limited to three indicators and requires a reflection on a number of additional governance conditions, which feature in the checklist* (OECD, 2018:67).

Similarities and differences between the indicators and the checklist are summarised in Table 3 below:

Table 3: Comparison of indicators and checklists

	Indicator assessment	**Checklist assessment**
Basis	12 Principles (three indicators per principle	12 Principles (variable number of questions per principle)
Way asked	Phrase Existence and functionality / level of implementation	Question Existence only (Is there...? Are you...?)
Response categories	6	4
Representation of findings	Traffic lights and spider charts	No chart; only ✗ ✓ and ⚙ to indicate 'in development'
Evidence required	Called 'Notes'	Called 'Information'

2.2.4.3 The process to apply the WGIF

The process to carry out the OECD self-assessment task consists of 10 steps (OECD, 2018:74-80). The 10 steps are divided into three phases, namely preparation, diagnosis and action. Figure 10 below depicts the three phases and their associated steps. See also Appendix 2.

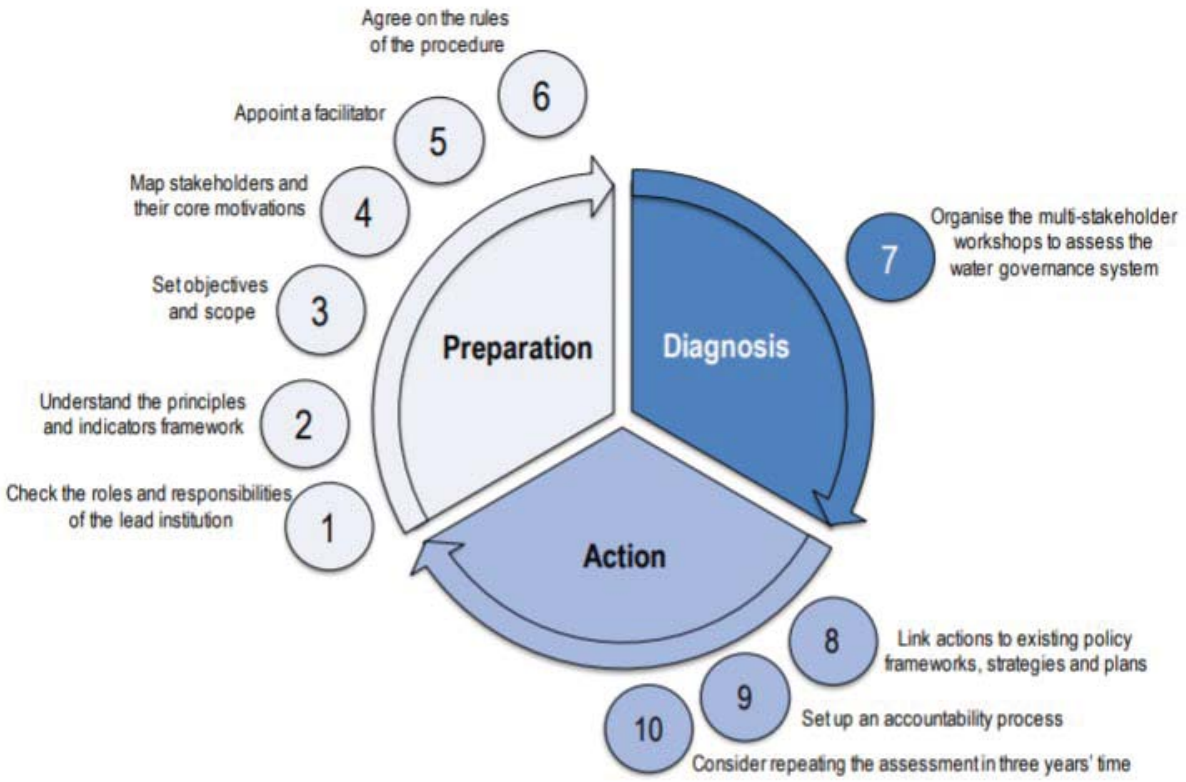


Figure 10: The 10 steps of the OECD WGIF self-assessment task (OECD, 2018)

2.2.4.4 Challenges and lessons learnt from the OECD pilots

The indicator framework was piloted in 12 areas, including two areas in Africa: Kinshasa in the Democratic Republic of the Congo and the Sebou River basin in Morocco (OECD, 2018:60). Table 4 summarises the pilot tests.

Table 4: OECD WGIF pilot tests

Pilot name	Country	Scale	Organising authority
Austria	Austria	National	Association of Water & Gas
Cabo Verde	Cabo Verde	National	National Water Authority
Peru	Peru	National	National Water Authority
Scotland, United Kingdom	Scotland, United Kingdom	Regional	Scottish government
Eindhoven & Helmond	Netherlands	Province	Deltares
Rimac	Peru	Basin	International Secretariat for Water
Jucar	Spain	Basin	Jucar Hydrographic Confederation
Sebou River	Morocco	Basin	Sebou River Basin Agency
Selangor	Malaysia	Basin	Selangor Water Authority
Segura	Spain	Basin	Spanish Association of Water Supply and Sanitation (AEAS)
Rio Nare in Antioquia	Colombia	Basin	World Wide Fund for Nature (WWF) Colombia
Kinshasa	Democratic Republic of Congo	Local	Global Water Partnership

According to the OECD (2018:60), the 12 pilots, which included OECD and non-OECD countries, provided a reality check on the robustness and coherence of the indicators, as well as their relevance to appraise the effectiveness, efficiency and inclusiveness of water governance systems[9].

The paragraphs below take a closer look at the results from the Kinshasa and Morocco pilots as reported by the Global Water Partnership (2018) and the Sebou River Basin Agency (2018):

In Kinshasa, a workshop (26-27 September 2017) was held with 54 stakeholders from a range of sectors to assess the OECD Water Governance Indicators (Global Water Partnership, 2018).

Stakeholders split into four working groups to address three principles and their associated nine Indicators and they also reviewed the checklist. The groups reported back on their discussions and the stakeholders jointly validated the traffic light colours during a plenary session.

The workshop experienced several challenges such as inadequate stakeholder representation, stakeholders finding it hard to understand some of the checklist questions and insufficient time for in depth discussions. Because the stakeholders were representative of various sectors, **the action plan was generic with no allocated responsibilities or time frame**.

In short, the Kinshasa workshop was clearly not the way to go.

The Morocco pilot was more successful. Two workshops allowed for more time to discuss the indicators and respond to the checklist. Getting the data together was a challenge as not all data was centrally available. Again, **the action plan was generic with no allocated responsibilities or time frame** (Sebou River Basin Agency, 2018).

It is interesting to note that, in both pilots, the essential step of formulating an action plan that could lead to improvement failed, confirming the dilemma of transforming self-assessment into improvement that Anderson et al. (2000) and the EFQM (2012, 2019) refer to.

2.2.4.5 Application of the OECD WGIF in South Africa

As far as could be established not much work has been done to apply the OECD WGIF in the South African context.

Neto et al. (2017) assess how existing water governance frameworks in a number of countries are aligned with the OECD WGIF. South Africa is included in the list of discussed countries. The article gives an overview of South African water legislation, policy and institutions. The article states that "South Africa's water legislation is highly innovative, and very well aligned with the OECD principles" (Neto et al., 2017:73), but it does not give specific examples of alignment.

A recent WRC project in KwaZulu-Natal and the Eastern Cape followed a similar approach to that of the OECD WGIF. The project focused on risk-based improvement planning and capacity building in selected district municipalities[10].

The OECD is planning a dialogue with the City of Cape Town in late 2020[11].

[9] See also: OECD. 2017. *Synthesis Report: Consolidated feedback on the pilot-test workshops on the OECD Water Governance Indicators*.

[10] See also: Van der Merwe-Botha, M. 2019. *Impact analysis of capacity building on risk management in selected district municipalities*. Water Research Commission: Pretoria.

[11] Personal communication with Mr John Dini, research manager of WRC Project K5/2935/1&2.

2.3 THE MUSSA TOOL

2.3.1 THE PURPOSE OF MUSSA

Chapter 7, Article 152 (1)(b) of the Constitution of the Republic of South Africa (RSA, 1996) assigns to local government the provision of services to communities. In terms of the Water Services Act 108 of 1997 (definition XX), a Water Services Authority (WSA) is a municipality that must ensure that all consumers or potential consumers within its area of jurisdiction have access to water services. 144 municipalities are currently designated as WSAs under the Water Services Act.

Although WSAs have executive authority for provision of water services in their area of jurisdiction, National Government, through the Minister of Water and Sanitation, is responsible for regulation, oversight, and support to WSAs (Article 9 (1) of the Water Services Act 108 of 1997).

MuSSA was developed by the Department of Water and Sanitation (DWS) as an instrument to assist National Government and WSAs in their respective roles and responsibilities.

On the one hand, it is essential for good water governance that National Government and all stakeholders in the water sector, including the public, receive regular and accurate data on how well the mandated WSAs are performing in delivering water and sanitation services. Put differently: that they are well informed of the business health status of water services in local government in South Africa.

On the other hand, it is also essential for WSAs to be able to assess their own business health and to put actions in place to address their challenges and improve water services delivery. According to DWS (2019), these challenges include:

- Poor planning and prioritisation;
- Aging infrastructure and increasing investment needs;
- Poor economic conditions;
- Adequacy of water resources and impact of climate change;
- Shifting patterns in water demand; and
- Competing political priorities.

2.3.2 MORE SPECIFIC OBJECTIVES

The more specific objectives of MuSSA are stated in the literature as (DWS, 2015):

- Provides flags of concern at a strategic level (vs. technical detail);
- Provide a common language between technical and non-technical officials (HR and finances) and with elected officials as to water services business health;
- Enable timeous identification of critical areas requiring support / intervention;
- Identify areas of opportunity for performance improvement;
- Support inter-departmental collaboration with respect to the Local Government Turn Around Strategy and subsequent deployment of the Municipal Infrastructure Support Agency (MISA) by the Department of Cooperative Governance (CoGTA);
- Benchmark local government status against local, regional and national levels;
- Inform policymakers on key aspects of Water Services Business Health;
- Inform national regulatory needs and planning;
- Monitor sector performance.

2.3.3 THE MUSSA TOOL

The concept of MuSSA originated from the American Water Works Association[12] and was adapted for the South African legislative context and aligned with, amongst others, the Integrated Development Plan (IDP), National Treasury (NT) guidelines, the Municipal Benchmarking Initiative and the Blue and Green Drops.

According to the MuSSA documents (DWS, 2019; DWS, 2015), the tool focuses on assessing the overall business health of WSAs to fulfil their water services function. It determines the vulnerability status of 18 key functional areas, called Business Health Attributes, of the water services business at a strategic level.

The 18 Business Health Attributes were identified in consultation with domain specialists and stakeholders. See Table 5 below.

Table 5: The MuSSA Business Health Attributes

1. Water and Sanitation Services Planning 2. Management Skill levels 3. Staff Skills Levels 4. Technical Staff capacity 5. Water Resources Management 6. Water Conservation and Demand Management 7. Drinking Water Safety and regulatory compliance 8. Basic sanitation 9. Wastewater/Environmental Safety and regulatory compliance 10. Infrastructure Asset Management	11. Operation and Maintenance of Assets 12. Financial Management 13. Revenue Collection 14. Financial asset management 15. Information Management 16. Organisational Performance Monitoring 17. Water and Sanitation Services Quality 18. Customer Care

The DWS MuSSA team is planning to add Faecal Sludge and Resilience as additional attributes[13].

2.3.3.1 Spreadsheet/online version

Municipal officials fill in a spreadsheet with 41 context statements plus 90 statements that relate to the 18 Business Health Attributes (five statements per attribute). See Appendix 3 for the MuSSA statements and response options.

DWS is currently (2019) rolling out an online version of the MuSSA spreadsheet.

2.3.3.2 The report

Every year, a report is generated, based on the responses of the WSA for that year. The report reflects the business health of a WSA in terms of a vulnerability index. The vulnerability per service area (business attribute) is weighted so that both the number and actual score of service areas are factored into the overall municipal index. Vulnerability in each service area is depicted in a spider chart.

The MuSSA spider chart works like a bicycle wheel with 18 spokes. The wheel represents the water services 'business'. For the business to be strong or healthy the spoke should be in the green (75%-

[12] Personal communication with Allestair Wensley and Chris Schmidt from DWS.

[13] Personal communication with Allestair Wensley and Chris Schmidt from DWS.

100% means low vulnerability). The vulnerability classifications per the associated colour are as follows (DWS, 2019):

Green: Low	Yellow: Moderate	Amber: High	Red: Extreme

Figure 11 is an example of a vulnerability index and a spider chart:

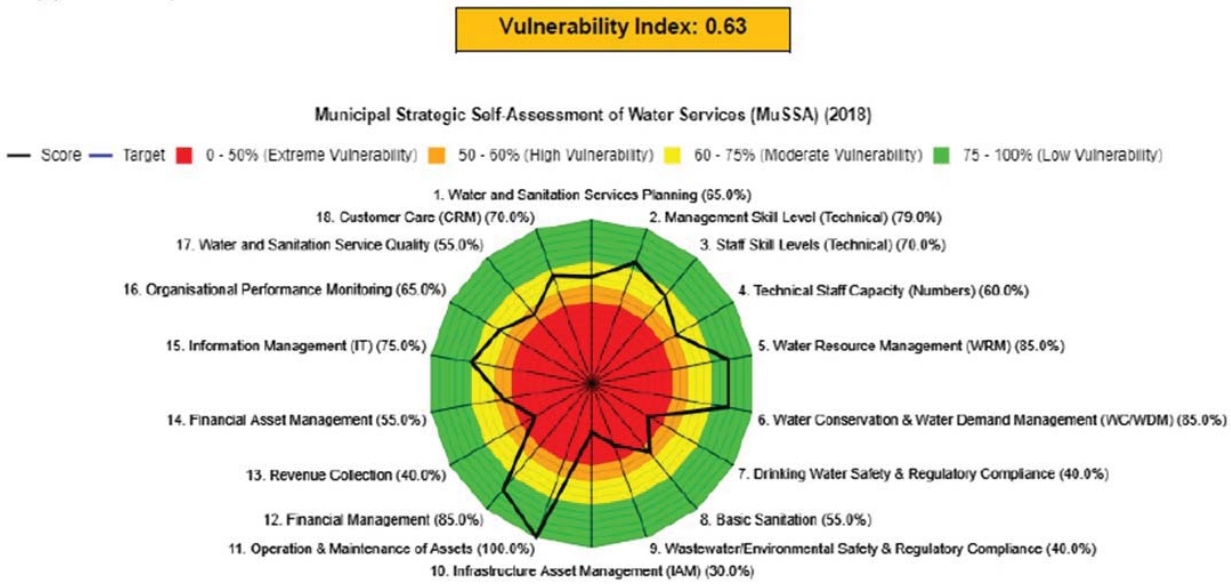


Figure 11: An example of a MuSSA vulnerability index and spider chart (DWS, 2015)

2.3.3.3 The Municipal Priority Action Plan (MPAP)

The MuSSA process does not stop at the report. For WSAs to get the intended value from MuSSA, they need to study the report and workshop strategic approaches for improvement. This is also known as the Municipal Priority Action Plan (MPAP) process. Once the strategic approach is confirmed, it must be made actionable by assigning responsibilities, duration and costs.

The MuSSA/MPAP is intended to feed directly into the municipal Water Services Development Plan (WSDP) and Master Planning Process, which in turn feeds into the IDP, the budget and the Service Delivery and Budget Implementation Plans (SDBIP) (DWS, 2015). It also supports the Office of the Presidency's Medium-Term Strategic Framework (MTSF) objectives, and, in particular, Outcome 9 (DWS, 2015).

2.3.4 THE MUSSA PROCESS

According to DWS (2019), the MuSSA instrument is completed annually by the Municipal Manager, Portfolio Councillor, Water Services Manager or Technical Director, Financial Services, Human Resources and Information Technology (IT).

Figure 12 depicts the MuSSA roadmap:

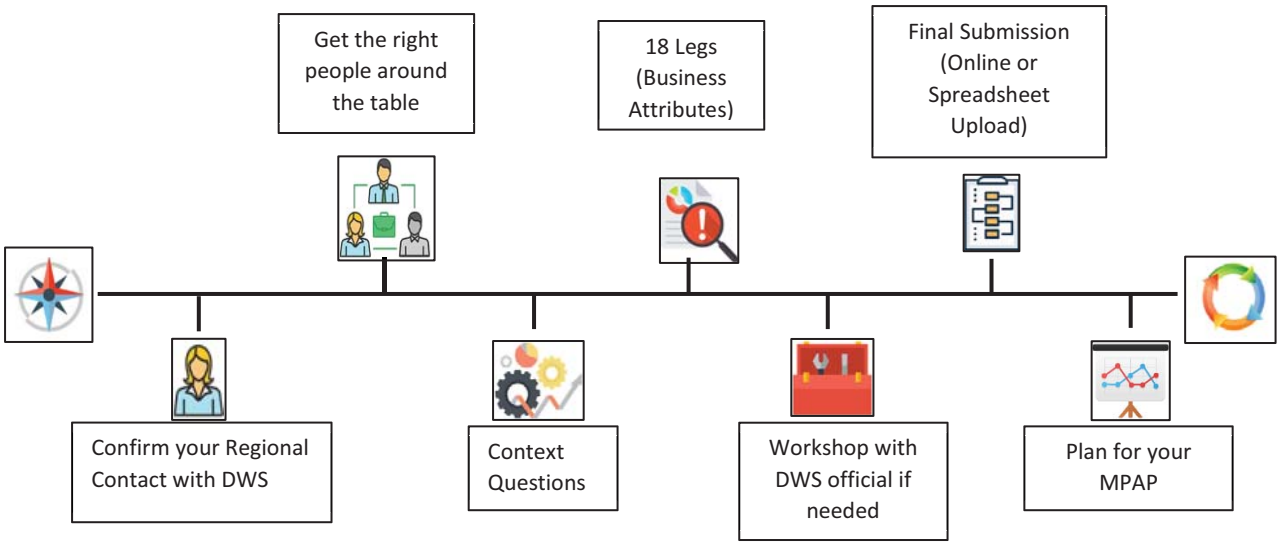


Figure 12: The MuSSA roadmap (DWS, 2019)

The DWS MuSSA team explained the steps of the roadmap as follows:

- Initially, DWS holds a briefing session with a WSA to take them through all the statements and to explain the response options. Each WSA has a MuSSA Regional Contact. This is the person who will be responsible for communication with DWS, coordinating the team and to whom the WSA submits the final completed MuSSA.
- MuSSA communication goes out to WSAs every year in May to inform and remind the WSA that it is time for their annual MuSSA.
- DWS subsequently engages with the WSAs to encourage them to submit, directly through correspondence and through the Regional Contacts, who would phone the WSAs.
- Once a WSA's submission is received, it is reviewed and checked against regulator's data and summarised on a sheet, and then analysed. In the analysis, each leg carries the same weight, but in the statistical analysis and the allocation of vulnerability, red and orange responses increase the total vulnerability.
- MuSSA results goes to National Treasury's Risk Register.
- Once the MuSSA findings are consolidated, the WSA can take itself through the Municipal Priority Action Plan (MPAP) process. DWS does not usually monitor implementation or progress with implementation of the Priority Action Plans.

2.3.5 Review of the MuSSA tool

There has not been a formal evaluation of the MuSSA process and tool. The evaluative evidence that the researchers initially had was anecdotal. On the one hand, there seemed to be evidence that the tool elicited useful discussions and workable action plans; on the other hand, there also seemed to be evidence that weak performing municipalities found it difficult to translate their vulnerabilities into workable action plans. **To date, only 25 WSAs have submitted Municipal Priority Action Plans, which indicate that, in this context as well, participants find it difficult to transform self-assessment into improvement.**

2.3.6 CONSULTATION WITH THE DWS MUSSA TEAM

The research team had two consultations with the DWS MuSSA team, Mr Allestair Wensley and Mr Chris Schmidt, on 25 January 2019 and 12 June 2019.

The DWS MuSSA team listed their expectations of the WRC study as:

- Validation of the process: how well does the process work?
- What is the acceptance of the process?
- An evaluation of the statements: too many; too few; gaps? How are the indicator statements and the response options understood?
- How do the MuSSA indicators compare with the OECD indicators?
- How can we position MuSSA as a value-adding tool to senior managers in the Department?
- Why do the CFOs (Chief Financial Officers) take the longest to respond to MuSSA?
- How do the municipalities complete the MuSSA instrument?
- What do the municipalities think DWS does with the information?
- How do municipalities perceive the value of MuSSA?

Chapter 3: Analysis and comparison of the two tools

In this chapter, the following aspects of the OECD WGIF and MuSSA will be analysed:

- The underlying conceptual framework
- Link to the business improvement cycle
- The indicators and response categories.

The last section of the chapter compares the two tools at different levels.

3.1 Analysis of OECD WGIF

3.1.1 The underlying conceptual framework

OECD WGIF is founded on three pillars and 12 principles (four for each pillar), as explained in Chapter 2. The pillars are defined in the OECD literature as follows:

> ***Effectiveness*** *relates to the contribution of governance to define clear sustainable water policy goals and targets at all levels of government, to implement those policy goals, and to meet expected targets.*
>
> ***Efficiency*** *relates to the contribution of governance to maximise the benefits of sustainable water management and welfare at the least cost to society.*
>
> ***Trust and Engagement*** *relate to the contribution of governance to building public confidence and ensuring inclusiveness of stakeholders through democratic legitimacy and fairness for society at large (OECD, 2015:3).*

The distinction between the pillars, ''efficiency'' and ''effectiveness'', and their relationship with the three pillar dimensions are not evident from the above explanation of the two terms. Similarly, it is also not clear why the ''Trust and Engagement'' pillar only applies to Stakeholder Engagement, Integrity and Transparency, Trade-offs and Monitoring and Evaluation, and not also to the other principles, for example Financing and Data and information.

It is interesting that the OECD itself applies pillars across principles in its description of some of the principles (emphasis added):

> *Principles 6: Ensure that governance arrangements help mobilise water finance and allocate financial resources in an* ***efficient, transparent*** *and timely manner. (Akhmouch et al., 2017)*

In the bottom dimension of the OECD WGIF diagram, the distinction between the pillar and the principles is fuzzy. For example, conceptually, the relationship between ''Trust and Engagement'' as a pillar and ''Integrity and Transparency'' as a principle under this pillar is problematic, because integrity and transparency are requirements for trust, not the other way around. In our view, these two are the fundamental values, i.e. the pillars.

Engagement is hardly a value; it could be construed as positive or negative and it can take place in absence of trust. Also, Engagement is a pillar, but Stakeholder Engagement is a principle – again, why is the one a pillar and the other a principle?

3.1.2 LINK TO THE BUSINESS IMPROVEMENT CYCLE

3.1.2.1 The ideal

The WGIF depicts an ideal: water governance that is grounded in three values and that applies a set of principles. With the indicators, the WGIF also sets standards for the application of these principles.

For each principle, the three indicators address **policy frameworks**, **institutions** responsible for implementation and **mechanisms** to review, identify gaps, or coordinate. The indicators require that these exist, be implemented and/or function. The outcome of the multi-stakeholder engagement with the indicators of the WGIF is an action plan for improvement.

Although not explicitly mentioned as such in the OECD literature, these three aspects reflect the business improvement cycle (Plan, Do, Check). The action plan (Act) that stakeholders develop following the self-assessment closes the circle.

Figure 13 illustrates the link between the improvement cycle and the OECD indicators for one of the indicators.

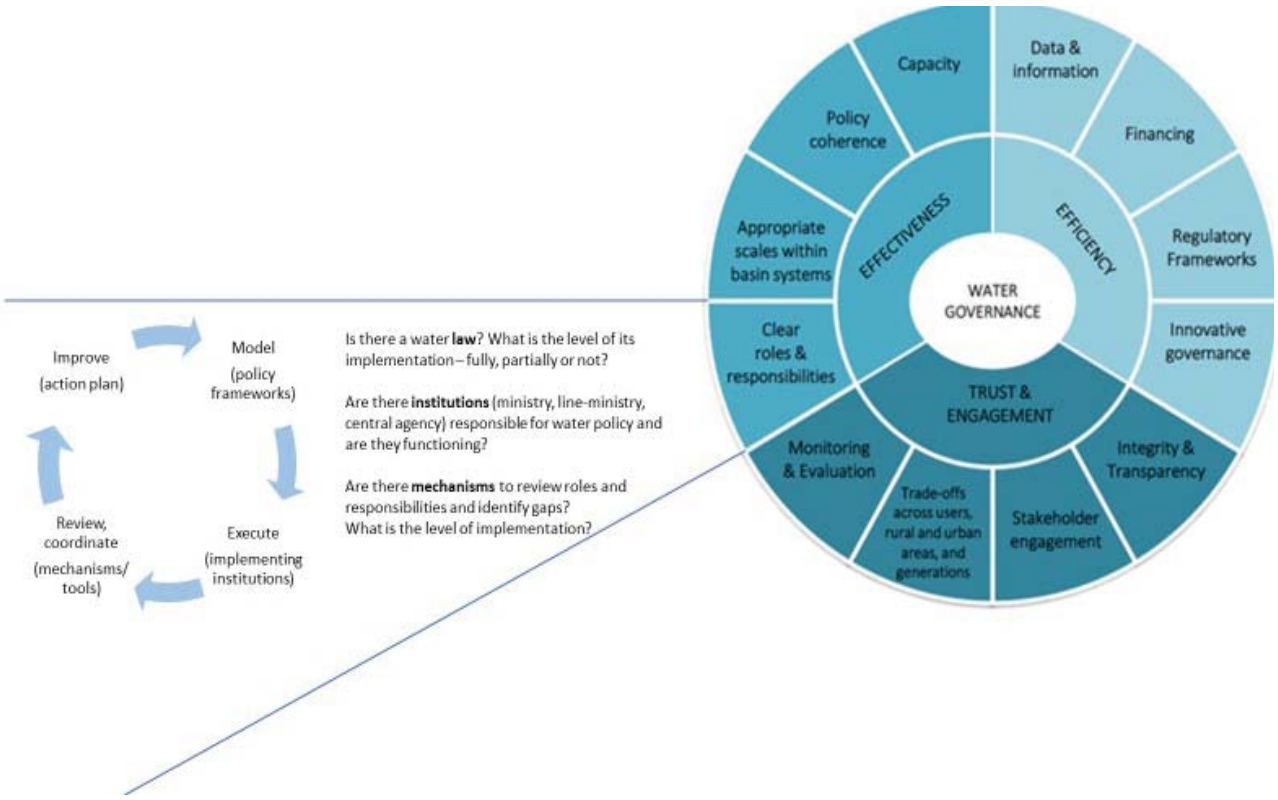


Figure 13: Aspects of the business improvement cycle imbedded in each water governance indicator (adapted from OECD, 2015)

If one turns the indicator statements into questions, the link with the business improvement cycle is more evident. See example for Principle 1 (Clear roles and responsibilities) in Table 6 below.

Table 6: Example of OECD WGIF indicators phrased as questions

Principle 1: Clear roles and responsibilities	**Indicators (policy, institutions, mechanisms)**
Existence and level of implementation of a water law	Is there a water law? What is the level of its implementation – fully, partially or not?
Existence and functioning of ministry, line ministry, central agency with core water-related responsibilities for policy making	Are there institutions (ministry, line-ministry, central agency) responsible for water policy and are they functioning?
Existence and implementation of mechanisms to review roles and responsibilities, to diagnose gaps and adjust when need be	Are there mechanisms to review roles and responsibilities and identify gaps? What is the level of implementation?

3.1.2.2 The WGIF principles and indicators mapped onto the Water Governance Cycle

The Water Governance Cycle appears in several OECD publications and related articles, such as Akhmouch et al. (2017). The Water Governance Cycle applies the business improvement cycle to water governance.

The OECD principles are "expected to contribute to improving the 'Water Governance Cycle' from policy design to implementation'' (OECD 2015:4), hence the mapping of the principles and indicators onto the Water Governance Cycle as illustrated in Figure 14:

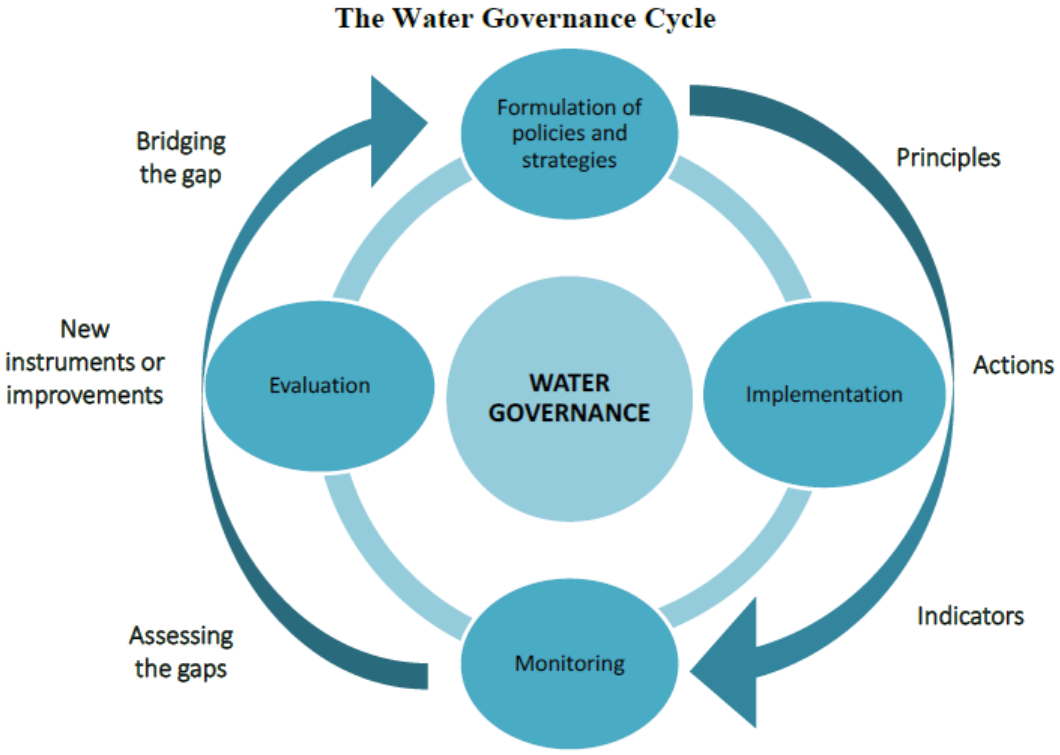


Figure 14: The WGIF principles and indicators mapped onto the Water Governance Cycle (OECD, 2015:4)

In neither the OECD publication (OECD 2015) nor the article by Akhmouch et al. (2017) is the mapping explained.

The research team found it difficult to understand why all the principles apply to the translation from policy and strategy to implementation, for example, the effectiveness principles deal specifically with policy and strategy formulation. Similarly, the team did not understand why the indicators are positioned between implementation and monitoring. The indicators are essentially monitoring and evaluation instruments, whose findings are supposed to translate into an action plan.

On the other hand, the OECD (2015:8) states that the principles ''apply to the overarching water policy cycle and should be implemented in a systemic and inclusive manner''. Does this mean that the principles are applicable to all aspects of the Water Governance Cycle?

In the business improvement cycle, "check'' aims to monitor and evaluate processes and results (outcomes or products) (Moen & Norman, 2005). The business excellence models, for example, have a strong focus on results. In the Water Governance Cycle, monitoring and evaluation aim to assess and bridge gaps. Gaps in processes or results, or both? And what are the anticipated results? This was not made clear in the literature consulted and we believe it should be addressed in the OECD figures.

In Chapter 6, an alternative model will be proposed to align the WGIF principles and pillars to the Water Governance Cycle. The Water Governance Cycle will be slightly adapted to also refer to results.

3.1.3 LINGUISTIC ANALYSIS

See Chapter 4.

3.2 ANALYSIS OF MUSSA

3.2.1 THE UNDERLYING CONCEPTUAL FRAMEWORK

The underlying conceptual framework of MuSSA is not evident. It is called a business health assessment, but it does not make a clear link to the conceptual frameworks of business health checks or business excellence models. What does a healthy WSA look like? What are the standards that a WSA must meet to be healthy in terms of each of the Business Health Attributes?

The term 'Business Health Attributes' is not always used consistently in the MuSSA literature. For example, statement C31 refers to 'Business Aspects'; elsewhere they are called service areas. It is recommended that the term ''business area'' is considered. For example, Water Resource Management or Infrastructure Asset Management are not attributes (characteristics) of the water business; they are indeed business or service areas.

3.2.2 LINK TO THE BUSINESS IMPROVEMENT CYCLE

MuSSA is focused on the last two steps in the business improvement cycle, namely Check and Act, with the emphasis on Check. See also the comments in 3.3.2.2.

3.2.3 VULNERABILITY ASSESSMENTS

The outcome of the MuSSA process is an assessment of the WSA's vulnerability.

Vulnerability assessments are typically associated with external threats, such as climate change or a terrorist attack threatening water security. The two examples that follow illustrate this association. In the USA, *The Public Health Security and Bioterrorism Response Act of 2002* amended *the Safe Drinking Water Act* to require community water systems serving over 3,300 customers to complete water vulnerability assessments (WVAs) (Staudinger et al., 2006). In the cyber security space, vulnerability assessments are associated with the threat of a cyber-attack.

Brooks (2003) in a working paper with the title "Vulnerability, risk and adaptation: A conceptual framework" notes that the literature is often unclear about the relationship between vulnerability and risk. The two concepts have a threat or a hazard in common. Risk indicates the impact of the threat and its probability. According to Brooks (2003), definitions of vulnerability can be classified as:

- Definitions that refer to the impact or outcome of a hazard such as cost, illness, injury and death, business interruption, damage to equipment or ecosystems, etc. (for example Jones and Boer (2003)) – also called biophysical vulnerability; and
- Definitions that refer to indicators of the state of a system before the hazard occurs, i.e. essentially the ability of the system to deal with an imminent hazard – also called inherent or social vulnerability.

Brookes (2003) concludes that it is the interaction between the hazard and the social or inherent vulnerability of the system that produces the particular outcome or impact of the hazard.

The above definitions of vulnerability all refer to a hazard. **The MuSSA report gives an overall vulnerability index for the WSA and a vulnerability expressed as a percentage for each Business Health Attribute, but there is no reference to the hazard(s)**. Vulnerable in terms of which hazard(s)? Conceptually there seems to be something amiss.

Also, the scoring seems to be counterintuitive: a low vulnerability index score and a low vulnerability percentage for a Business Health Attribute actually indicate a high vulnerability. See Figure 11 for an example of a vulnerability chart.

3.2.4 LINGUISTIC ANALYSIS

See Chapter 4.

3.2.5 PRIMARY RESEARCH

The MuSSA process and tool was researched in interviews with a sample of municipalities. See Chapter 5 for the details and an analysis of the findings.

3.3 ALIGNMENT OF OECD WGIF AND MUSSA

3.3.1 COMPARISON OF THE OECD WGIF AND THE MUSSA TOOLS

There are several similarities between the OECD WGIF and MuSSA as Table 7 illustrates.

Table 7: Comparison of the OECD WGIF and MuSSA

OECD Water Governance Indicator Framework	Municipal Strategic Self-assessment tool
Good water governance	Business health (of water management within a municipality): expressed in terms of vulnerability
Lean towards network model of governance	Lean towards hierarchical model as typically found in municipalities
Multi-stakeholder engagement	Internal assessment; no involvement of external stakeholders
Voluntary	Voluntary
Grounded in the broader principles of good governance: legitimacy, transparency, accountability, human rights, rule of law and inclusiveness	Grounded in sector performance indicators – inferred
Goal-orientated: The framework is a means to an end: delivering sufficient water of good quality, while maintaining or improving the ecological integrity of water bodies	Goal: business health – inferred The pillars: efficient operational management – inferred
Objective: to stimulate transparent and inclusive dialogue across stakeholders on what works, what does not, what should be improved and who can do what	Objective: Identify and prioritise areas of vulnerability and develop a MPAP to address areas of vulnerability
Not a benchmarking, monitoring, or reporting tool Learning and self-improvement tool; tool to stimulate critical thinking	Performance management tool; benchmarking tool, reporting tool (inform policy makers) Self-improvement tool – inferred MPAP can be used to leverage support
Approach: Gap diagnosis and finding mechanisms and actions to bridge the gaps	Approach: vulnerability assessment
Method: self-assessment	Method: self-assessment

OECD Water Governance Indicator Framework	Municipal Strategic Self-assessment tool
3 pillars 12 principles 36 indicator statements (3 per principle, 1 for policy, 1 for institutions and 1 for mechanisms) 100+ checklist questions	18 Business Health Attributes 5 statements per attribute Plus 41 context statements
The same response categories for all statements; checklist questions also have the same response categories, but these are different from those of the statements	Response categories tailored for each statement
Generic; the participants must provide the specifics More high level although providing for different scales or levels of governance	Specific to the South African local government context and the laws and regulations that apply to it
Action plan developed in the stakeholder workshops Very generic in pilots	Action plan (MPAP) is voluntary Very few WSAs have Action Plans

The main high-level differences between the tools are the following:

- MuSSA is an internal organisational assessment; the OECD WGIF is a process to involve a range of stakeholders in finding solutions for water management. The OECD WGIF broadens the responsibility of water management to include the private sector and civil society.
- The OECD WGIF is applicable to all levels (scales) of government and all water functions; MuSSA is focused on local government and water services.

3.3.2 Are the OECD WGIF principles applied in MuSSA?

3.3.2.1 At the level of pillars and principles

The MuSSA tool assesses the business health of municipal water services; it would therefore be fair to say that ''efficiency'' and ''effectiveness'' are implicit in MuSSA. However, organisational culture (''inclusivity'', ''engagement'') and behaviour (''integrity'', ''honesty'') that would lead to trust are not addressed in the MuSSA attributes.

Table 8 shows how each of the principles are addressed in the MuSSA tool. Gaps in the MuSSA tool are highlighted in turquoise.

Table 8: OECD WGIF Principles addressed in MusSSA tool

WGIF Principles (P)	**Addressed in MuSSA Business Health Attributes (B)**
P1: Having clear roles and responsibilities for policymaking, regulation and policy implementation and coordination across institutions	Focused on roles and responsibilities within the municipality B1 Water and Sanitation Services Planning addresses policy making B2: Management Skills levels refers to the appropriate organogram for water services management B3: Staff skills levels
P2: Managing water resources at appropriate levels(scales) within a catchment	B5: Water Resources management addresses the responsibilities of local government in this regard
P3: Having coherent policies across sectors, including environment, health, energy, agriculture, industry, spatial and land use	B1: Probably addressed in IDP, but not explicitly mentioned
P4: Having the capacity and competencies to achieve goals and deal with challenges	B2-4: Management Skills, Staff skills and technical skills deal with capacity and capacity building
P5: Producing, updating and sharing relevant water-related data and information	This principle is addressed in several attributes: B5 – data on the state of current and future water resources B6 – data on non-revenue water B7 – data on drinking water safety B8 – data on basic sanitation B9 – data on effluent quality B10 – data on assets B13 – data on revenue collection B17 – critical databases and documents
P6: Allocating the necessary financial resources	This principle is addressed in B12-14 (Financial Management, Revenue collection and Financial asset management), but also in B7-B9 when questions are asked about having sufficient financial resources for each of these functional areas
P7: Having sound regulatory frameworks	The development of regulatory frameworks is not addressed in the MuSSA tool, because they are developed at national level and applied at local government level
P8: Adopting innovative water governance practices	This is not specifically addressed in the MuSSA tool. Innovation is typically found in well-capacitated and functioning municipalities. As such, it would be a marker of business health.
P9: Mainstream integrity and transparency practices	Not addressed in the MuSSA attributes, but addressed in C26-28
P10: Promoting stakeholder engagement	C30 addresses public participation. B17 and B18 deal with customer engagement and Customer Care, which could be interpreted as stakeholder engagement.

WGIF Principles (P)	Addressed in MuSSA Business Health Attributes (B)
P11: Encouraging water trade-offs across water users, rural and urban	Not directly addressed in the MuSSA tool although it could be addressed in public participation programmes
P12 Regular monitoring and evaluation and sharing results with the public	Monitoring and evaluation are referred to in several of the attributes: B7 and B9: monitoring regulatory compliance of drinking water and effluent B16: Organisational performance management B17: Water and Sanitation services quality B18: Customer Care (customer satisfaction survey) Sharing results with the public is not mentioned in the MuSSA tool

Although the two tools are fundamentally different as has been indicated above, the MuSSA tool could consider the pillars and principles that it does not currently explicitly address:

1. Organisational culture and behaviour would be specifically relevant for a South African local government environment in which corruption is rife and consumers have little trust in their municipalities.
2. Innovation, which is one of the WGIF principles, does not feature in MuSSA. Innovation is typically found in well-capacitated and functioning municipalities. As such, it would be a marker of business health. It is recommended that the principle is addressed in MuSSA.
3. Stakeholder engagement, another WGIF principle, does not feature in the MuSSA attributes, but it does feature in C30 in the form of public participation. The MuSSA attributes could be expanded to include stakeholder and customer engagement as WSAs tend to be weak in this area compared to organisations in the private sector. Since Supply Chain Management is an important aspect of municipal water service, we believe suppliers should be included in stakeholder engagement activities.
4. OECD WGIF principle 3, having coherent water policies across sectors at local government level, including environment, health, energy, agriculture, industry, spatial and land use, is probably addressed in the IDP, but could be explicitly mentioned in MuSSA.
5. OECD WGIF principle 11, encouraging water trade-offs across water users, rural and urban, is not directly addressed in the MuSSA tool although it could be addressed in public participation programmes. This could also be made more explicit.

3.3.2.2 At the level of statements and indicators

The OECD WGIF follows a tight structure. Each principle comprises three indicators and the indicators are structured to address policy frameworks, institutions responsible for implementation and mechanisms to review.

In comparison, each MuSSA attribute is associated with five statements, but the statements are not as tightly structured as is the case with the OECD principles. Some Business Health Attributes, like B5, B6, B7, B9 and B10, refer in statement 1 or 2 to a policy framework or a plan being in place. This is in line with the OECD indicators. These Business Health Attributes also have statements that refer

to the WSA's performance in this area, the available resources, budget, implementation and intervention but not in a fixed order.

Other attributes follow a different structure. Table 9 below shows a few examples.

Table 9: Examples of internal structure of MuSSA attributes

Attribute 2: Management skill level	
Statement 1	Organogram approved by Council
Statement 2	Sufficient staff
Statement 3	Staff have correct skills/qualifications and experience
Statement 4	Skills development
Statement 5	Performance agreements signed and monitored
Attribute 3: Staff skill level (technical)	
Statement 1	Water Treatment Plants (WTPs) have required skills/qualifications and experience
Statement 2	Wastewater Treatment Plants (WWTPs) have required skills/qualifications and experience
Statement 3	Water system plumbers, millwrights, mechanics and electricians have required skills/qualifications and experience
Statement 4	Sewage system plumbers, millwrights, mechanics and electricians have required skills/qualifications and experience
Statement 5	Skills development
Attribute 4: Technical staff capacity (numbers)	
Statement 1	Organogram approved by Council
Statement 2	WTPs operated by appropriate number of staff
Statement 3	WWTPs operated by appropriate number of staff
Statement 4	Sanitation network, operations and repair have appropriate number of staff
Statement 5	Mentoring programme in place

A tighter structure for the MuSSA statements that reflects the ideal or the standard will make it clearer for participants to see where they are falling short and what they must do to improve. This will also be further explored in the recommendations in the last chapter.

Chapter 4: Linguistic analysis of the two tools

4.1 INTRODUCTION

Data integrity is critical for the success of both tools. The research team used a cognitive interviewing framework to conduct a conceptual and linguistic analysis of the statements of the two self-assessment tools. The analysis aims to identify structural, logic, semantic and respondent task aspects that participants are likely to find problematic and which could affect data integrity.

Initial analysis of both tools has indicated that the terminology and the phrasing of the OECD indicator statements, and the statements associated with the MuSSA Business Health Attributes can be improved to make it easier for stakeholders to meaningfully and accurately engage with them.

Before we go into the analysis, we will briefly discuss the theory and methodology of cognitive interviewing and a framework of analysis.

4.2 WHAT IS COGNITIVE INTERVIEWING?

4.2.1 THEORY AND METHODOLOGY

In the 1980s, psychologists and survey methodologists joined forces to create a new field of study, called CASM or Cognitive Aspects of Survey Methodology (Schwarz, 2007).

Willis (2004) describes cognitive interviewing as “techniques to study the manner in which target audiences understand, mentally process and respond to the materials represented with a special emphasis on potential breakdowns in this process”.

The cognitive interviewing methods used most frequently are ‘’verbal probing’’, ‘’think-aloud’’ and ‘’vignettes’’.

Verbal probing involves questions that unpack how the respondent got to their answers. There are different categories of probes, including comprehension/interpretation probes, paraphrasing, confidence judgement, recall probes, specific probes and general probes (Willis, 1999).

The **think-aloud** method refers to a very specific activity where respondents are explicitly asked to “think aloud” as they answer a question (Willis, 1999).

The **vignette** method comprises brief descriptions of hypothetical situations that are presented to respondents. Respondents are asked to base their answers to the survey questions on the vignette (Collins, 2003; Willis, 2004).

In this study, the verbal probing method was used.

4.2.2 FRAMEWORK OF ANALYSIS

Table 10 below shows a framework of analysis for typical issues identified during the cognitive interviewing process. The framework of analysis is based on the coding frame of Presser and Blair

(1994) (Blair & Brick, 2010) and insights from the research team's previous cognitive interviewing studies[14].

Table 10 Framework of analysis for survey questions and response categories

Structural or logic issues

- Flow or relation between questions
- Structure or organisation of information
- Amount of information

Semantic issues

- Ambiguity
- Semantic categories
- Weak verbs
- Insufficient knowledge:
    - Technical term is not understood
    - Common term is not understood
    - Abbreviations not understood
- Inability to analyse the relationship between clauses in a complex sentence
- Conceptual variability

Respondent task issues

- Recall
- Inappropriate response categories
- Response categories that do not talk to the question
- Overlapping response categories
- Response categories are insufficient
- Response categories making too fine a distinction
- Too many response categories
- Sensitivity
- Accuracy of responses to open questions:
    - Spelling
    - Incompleteness

We will now proceed to apply the framework of analysis to selected statements of the two tools.

[14] Studies include testing an SMS survey for the i2i facility (FinMark Trust) (2018); testing a social housing questionnaire for Genesis (2018); testing concepts and survey questions for MultiChoice (2019); testing online surveys for Cenfri (2019).

4.3 AN ANALYSIS OF THE OECD WGIF INDICATORS AND RESPONSE CATEGORIES

4.3.1 THE INDICATORS

The OECD WGIF indicators are presented as statements with explanations, as can be seen in the example below of the current wording of indicators under Principle 1 (Table 11):

Table 11: Current wording of indicators under Principle 1

Principle 1: Clear roles and responsibilities

Indicators

a. **Existence and level of implementation of a water law**
This indicator seeks to appraise the existence and level of implementation of a water law, which can be at national level or subnational level depending on the institutional feature of the country (unitary or federal). The law should clearly assign and distinguish water-related roles and responsibilities for policy making (especially priority setting and strategic planning).

b. **Existence and functioning of ministry, line ministry, central agency with core water-related responsibilities for policy making**
This indicator seeks to appraise the existence and functioning of institutions in charge of setting water-related policy goals and strategies and delivering them; these can be at national or subnational level depending on the scale of the self-assessment and the institutional feature of the country (unitary, federal).

c. **Existence and implementation of mechanisms to review roles and responsibilities, to diagnose gaps and adjust when need be**
This indicator seeks to appraise the existence and level of implementation of mechanisms that can help identify areas of water management where there is no clarity on who does what; areas with incoherent and/or contradictory objectives; areas with deficient implementation and/or limited enforcement; and/or areas with overlaps/duplication of responsibilities. They can take the form of analytical reports, regulatory impact assessments or regulatory reviews; open stakeholder consultations.

The statements all have the same structure: existence and (level of) implementation for policy frameworks and mechanisms (a and c indicators); existence and functioning for institutions (b indicators).

Participants are expected to 'translate' the statements into questions and tick the relevant response category. Using statements instead of questions require nominalisations (turning verbs into nouns), which are much more difficult for respondents to process than questions with verbs. Compare, for example, the first statement with the simple underlying question:

Existence and level of implementation of a water law

Is there a water law and to what level is it implemented?

In the attempt to keep the structure of the statements consistent across the indicators, verbs have been turned into nouns as the highlighted words in the example below from Principle 2, Appropriate scales within basin systems, illustrates:

a. Existence and level of implementation of co-operation mechanisms for the management of water resources across water-related users and levels of government from local to basin, regional, national and upper scales

When the four highlighted nouns were analysed, we reasoned as follows: If water resources are managed across users and levels of government, it must be co-operative management. If water resources are managed across users and levels of government, it must also happen through some mechanism, i.e. a mechanism will exist, and has been implemented. In other words, the word ''management'' implies existence and implementation and co-operation. (By the way, it is not clear how ''water-related'' users differ from ''water users'' or why the word is necessary, but we kept the term.)

When this reasoning was applied, and the nouns turned into verbs, the statement was re-phrased as a simple question:

Are water resources managed across water-related users and across levels of government (from local to basin, regional, national and transboundary)?

How well this co-operative management is functioning, is another question.

4.3.2 The response categories

The same response categories are used for all the indicator statements:

Traffic light baseline					
In place, functioning	In place, partly implemented	In place, not implemented	Framework under development	Not in place	Not applicable

However, not all indicators (existence, implementation, level of implementation and functioning) are covered by the response categories as illustrated below [response categories in square brackets – the missing categories are highlighted in turquoise]:

- Existence [in place; under development; not in place; not applicable]
- Implementation [fully implemented; partly implemented; not implemented]
- Functioning [functioning; partly functioning; not functioning]

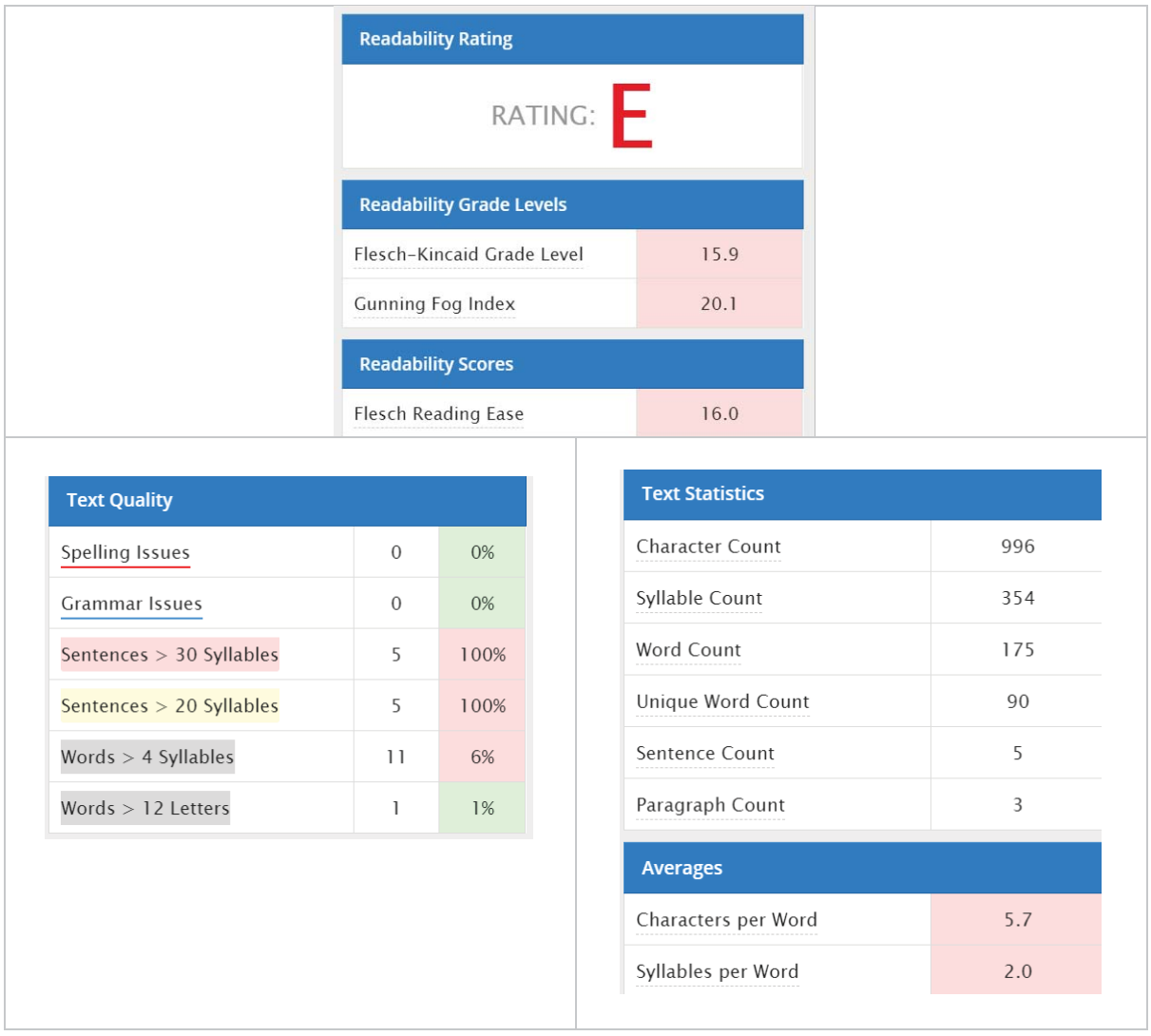
The reasoning seems to be that fully implemented is equal to functioning and that something which is partly implemented, cannot be functioning. This begs the question: Why is functioning asked?

The same argument would go for level of implementation, which is asked in some statements. The response categories 'implemented/partly implemented/not implemented/under development' cover levels of implementation, which makes one wonder if it was necessary to ask level of implementation in the statements.

Also, some indicators do not ask implementation, for example the second indicator of Principle 10: *Existence and functioning of organisational structures and responsible authorities to engage stakeholders in water-related policies and decisions.* The second, third and fourth response categories are not relevant for this statement.

4.3.3 READABILITY ASSESSMENT

Attached to each indicator is an explanatory paragraph. We've put the three explanatory paragraphs of Principle 1 through three readability tests: the Flesch-Kincaid Grade level, the Gunning Fog test and the Flesch Reading Ease test. The three paragraphs were rated E based on the scores of the three tests (A is the most readable; F is the least readable). The unfavourable rating is the result of the long sentences (35 words on average), a large number of technical terms, and complex sentence structures. See Figure 15 for the scores.



Readability Rating	
RATING:	E

Readability Grade Levels	
Flesch–Kincaid Grade Level	15.9
Gunning Fog Index	20.1

Readability Scores	
Flesch Reading Ease	16.0

Text Quality		
Spelling Issues	0	0%
Grammar Issues	0	0%
Sentences > 30 Syllables	5	100%
Sentences > 20 Syllables	5	100%
Words > 4 Syllables	11	6%
Words > 12 Letters	1	1%

Text Statistics	
Character Count	996
Syllable Count	354
Word Count	175
Unique Word Count	90
Sentence Count	5
Paragraph Count	3

Averages	
Characters per Word	5.7
Syllables per Word	2.0

Figure 15: Readability assessment of explanatory paragraphs associated with Principle 1

The degree of difficulty of the explanations is exacerbated by the fact that the examples that could clarify the statement are usually given right at the end of the explanations, where they can easily be missed by readers. Plus, to be applicable to all countries and scales of governance, these examples have to be generic, which adds another level of complexity.

Together, this probably makes the assessment of the indicators a very tedious process for participants.

4.4 AN ANALYSIS OF THE MUSSA STATEMENTS AND RESPONSE CATEGORIES

4.4.1 INDICATOR STATEMENTS AND RESPONSE CATEGORIES

The MuSSA business health questions are also phrased as statements. The same comments as for the OECD WGIF indicators apply.

In addition, three main issues were identified:

- Many statements are not singular; they combine two or more underlying questions into a single statement. When two or more questions are asked, the response categories have to reflect all possible combinations and clearly distinguish them, or the respondent will not know which response relates to which question. Examples appear below. This comment is particularly relevant for response categories that refer to percentages.
- The response categories relate to a five-point scale: strongly agree, agree (mostly agree for some statements), neither agree nor disagree, disagree, strongly disagree, which is commonly used for statements in survey questionnaires. However, the scale is not consistently applied, which could confuse participants. Plus, 'yes' and 'no', which are appropriate response categories for questions, but not for statements, are often added.
- Many of the statements contain evaluative words like 'appropriate' and 'sufficient'. These will be interpreted from the perspective of the respondent and could reflect a variety of realities, which would have serious implications for data integrity.

See Appendix 4 for specific examples of structural/logic, semantic and respondent task aspects that participants are likely to find problematic. In the primary research, cognitive interviewing was used to test some of these potentially problematic statements and response categories.

4.4.2 READABILITY ASSESSMENT

We selected two MuSSA statements at random to put through the readability tests.

Figure 16 shows the scores of the statements:

Statement 1:	Statement 2:
Your appropriate water and sanitation services planning (e.g. WSDP) and associated master planning processes include and are aligned with appropriate Water and Sewage Master Plans, Spatial Development Framework (SDF), Water Safety Plans and Wastewater Risk Abatement Plans (W_2RAPs), and are aligned to your IDP and associated SDBIP targets.	The metered quantity of water available from the resources is sufficient for your future WSA needs (at the stipulated level of abstraction and assurance of supply, and considering possible climate change impacts) (i.e. no shortage in 10 years).

Readability score:	
ReadablePro Rating	E
Flesch-Kincaid Grade Level	25.7
Gunning Fog Index	24.2
Syllable Count	92
Word Count	48
Sentence Count	1
Paragraph Count	1
Spelling Errors	0
Grammar Errors	0
Readability and Quality Issues	5

Readability score:	
ReadablePro Rating	E
Flesch-Kincaid Grade Level	19.6
Gunning Fog Index	24.5
Syllable Count	65
Word Count	37
Sentence Count	1
Paragraph Count	1
Spelling Errors	0
Grammar Errors	0
Readability and Quality Issues	1

Figure 16: Readability assessment of two MuSSA statements

Both statements were rated E, i.e. difficult to read. Statement 1 has a word count of 48 and statement 2 consists of 37 words. Both statements are littered with technical terms and have complex sentence structures.

Chapter 5: Primary research

5.1 INTRODUCTION

The desktop analysis discussed in Chapter 4 was followed by primary research in which a sample of municipal officials were interviewed about the MuSSA process, and their understanding and use of the tool. Chapter 5 describes the primary research and the findings.

5.2 THE SAMPLE

A purposeful sample of 10 municipalities (WSAs) was selected for the primary research. The selection criteria were:

- participation in MuSSA,
- municipality type,
- vulnerability level,
- existence of an MPAP,
- willingness to participate in the research, and
- travel cost.

Only municipalities that have submitted their 2018 MuSSA updates were included in the sample.

The sample comprised two Metros, six Local Municipalities and two District Municipalities from Gauteng, the Western Cape, North West, Mpumalanga, Limpopo and the Eastern Cape.

The report will use the following abbreviations: Mx for Metros, LMx for the Local Municipalities and DMx for the District Municipalities.

5.3 MUNICIPAL VISITS

5.3.1 FOCUS GROUPS

5.3.1.1 Discussion guide

The discussion guide appears in Appendix 5. The discussion guide was slightly tailored for each municipality. For example, a municipality that has not yet used the online version of the MuSSA instrument, would not be asked about their user experience. Or, a municipality that does not have an MPAP would not be asked about the process that they followed to develop an MPAP.

5.3.1.2 Participants

The invitation to participate in the MuSSA review asked that all officials who were involved in completing the 2018 spreadsheet attend the focus group.

In most municipalities, only one or two officials from Water Services attended the meeting. The research team was told that the other officials had commitments and could not or could no longer attend. Finance officials were busy with budgets. Only in one municipality, did a full MuSSA team attend. As a result, the interaction was more an individual interview than a focus group.

Table 12 summarises attendance and the venue where the discussions took place. The attendance and the venue are a finding in itself. It is noticeable that municipalities use different names for

management positions, such as manager, director and unit head. The function itself is also not uniformly named, for example Water Services, Water and Sanitation (Services), Technical Services, Operations, and Infrastructure Services.

Table 12: MuSSA review attendees

Municipality	Attendees (positions)	Number of participants	Venue
M1	The research team was unable to get hold of any of the persons listed in MuSSA report on the phone. After a suggestion from a contact, the Deputy Director: Water Services, Policy Development and Regulation, was contacted successfully and she set up the meeting. The Divisional Manager: Operations Support and an official from Water Resources attended the meeting.	2	Boardroom
M2	The invitation went to the Director: Strategic Planning (Water and Sanitation), who was previously the Divisional Head: Planning. He arranged the meeting and two colleagues attended: an official from Planning and one from Water Quality.	3	Boardroom
LM1	Invitation was sent to the Director: Infrastructure Services. He delegated it to the Water Resource Engineer, who in turn delegated the discussion down to the Admin officer who is the person who completes the MuSSA instrument. The Water Resource Engineer was attending an important meeting with service providers, but he joined the MuSSA meeting for a short while.	2	Shared office
LM2	The Unit Head for Water Services received the invitation and coordinated the meeting. The full MuSSA team people attended including: Unit Head: Financial Control (Budget and Treasury Office [BTO]) Unit Head: Sanitation Technician: Sanitation Technician: Water and Sanitation Legal advisor	5	Boardroom
LM3	The Deputy Director: Water & Sanitation Services was the only one who responded to the invitation. He turned out to be the MuSSA champion and coordinated the meeting. He was the only attendee. Finance apologised because they were busy with the annual auditing report for National Treasury.	1	Original venue was locked, had to move to small empty room in library.
LM4	The Manager: Water and Sanitation responded to the invitation. He is the MuSSA champion. He invited relevant colleagues, but they apologised and did not attend.	1	Office

Municipality	Attendees (positions)	Number of participants	Venue
LM5	The Head: Water and Sanitation responded to the invitation but did not turn up for the appointment. He then delegated the task to the Manager: Water and Sanitation, who rescheduled another meeting, also did not turn up, but eventually turned up later the same afternoon.	1	Coffee shop
LM6	The Director: Technical Services, who is also the MuSSA champion, received the invitation and invited relevant colleagues. He invited to the meeting a junior colleague from the Project Management Unit, who will be assisting with completing the MuSSA instrument in future.	2	Office
DM1	No-one on the MuSSA list responded to the invitation and the municipality's phones just rang and rang. Through a contact, the research team got hold of the General Manager: Operations and the Manager: Water and Sanitation, who coordinated the meeting. No other officials attended the meeting	2	Office
DM2	Initially, nobody responded. After a few phone calls, the research team was directed to the new Executive Manager: Infrastructure Services, who made the arrangements, but could not attend in the end. The Deputy Executive Manager: Infrastructure Services and the Manager: Water Quality attended the meeting.	2	Boardroom
TOTAL		21	

5.3.2 COGNITIVE INTERVIEWING

In the initial research design, a separate interview was planned with the participants of the focus group to interview them on the specific MuSSA statements that they completed. After the first municipal visit, it was evident that this methodology was not practical: It took more than an hour to go through the discussion guide. By the time the researchers have gone through all the statements, the respondent(s) was tired, and it was evident that they wanted to get on with other commitments. Also, since there were only one or two respondents in most municipalities, it made more sense to do the cognitive interviewing as part of the focus group and not in a follow-up interview.

5.4 FINDINGS

5.4.1 CONTEXTUAL INFORMATION

The sample included a range of municipal types and sizes.

5.4.1.1 M1

Water and sanitation services is provided by a municipal entity. The entity supplies approximately 833 004 domestic, commercial and industrial customers and serves an estimated consumer base of about 5,1 million people. It supplies 1 553 ML (megalitre) of drinking water per day. The entity treats 925 ML/day of sewerage at its six WWTPs.

5.4.1.2 M2

The municipality is both a designated WSA and Water Services Provider (WSP). M2 serves 1 034 797 households (2017/18 annual report). They are responsible for the sewer system and conveyance of sewage to the wastewater treatment plants operated by a service provider. The municipality provides water services that include bulk wastewater conveyance and a wastewater treatment service to over 2 000 industries and more than 3,5 million people. The service provider is currently the custodian of 19 WWTPs, treating a total capacity of 696 ML of wastewater per day.

5.4.1.3 LM1

LM1 supplies water to the consumers in their area of jurisdiction through five water supply systems. The total population supplied with water in the municipal area amounts to approximately 168 737 people. Water is also supplied to a fairly extensive industrial area. The municipality manages three WTPs. The potable water supply from these plants amounts to 16,76 ML per day. The municipality recently upgraded their WWTP from 20 ML/d to 35 ML/d.

5.4.1.4 LM2

LM 2 is a local municipality in the northern parts of the country. Their consumer base includes domestic consumers, mines and other industries and agricultural entities.

5.4.1.5 LM3

LM3 serves 83 468 households (2017/18 annual report). According to the annual report, about 83% of the households have access to water-borne sanitation, whereas rural and farm dwellers have access to biological toilets or pit latrines which are maintained by the municipality.

5.4.1.6 LM4

The municipal area of LM4 is divided into 15 regional water schemes. LM4 is a WSA and WSP. 65% of their drinking water is bought already treated from a Water Board. The municipality serves a total of 239 116 households (2017/18 annual report). They have plans in place to refurbish the wastewater treatment plant. Basic sanitation facilities include VIP (ventilated improved pit) systems.

5.4.1.7 LM5

LM5 is a WSA and WSP. They buy drinking water from the local Water Board. They treat their own wastewater and have three WWTPs: 38 ML, 19,5 ML and 0,6 ML. Sanitation: there are four large informal settlement areas with ordinary pit latrines that they service by emptying pits. In one area, they have 6000 pit latrines, in another area 4800 that they service. They have a schedule to service all latrines. The faecal sludge goes directly to their largest WWTP. The treatment plant was designed to receive these loads.

5.4.1.8 LM6

LM6 is a small WSA with 35 000 people in three main towns. Two areas belong to the mines and Eskom. The 6,5 ML WTP is currently being upgraded to 19,5 ML. At the moment they buy water from Eskom for one area, but the power station is being decommissioned, hence the upgrade. Each area has its own WWTP: Plants are being upgraded to 12,5 ML per day, 1,5 ML per day, 1,5 ML per day and 0,5 ML per day respectively. Some of the funding for the upgrades comes from national grants; some is supplied by Council. The population is relatively stable. Apart from the mines and Eskom, it is an area of low economic activity.

5.4.1.9 DM1

DM1 is a district municipality. Approximately 30% of the water consumed in the district is purchased from a Water Board. The rest of the water is supplied by 30 WTPs and 80 borehole schemes. Water

is supplied through metered yard connections in the towns and through communal standpipes in rural areas and informal settlements. The municipality provides sanitation services via water borne sanitation connected to 15 WWTPs, emptying of conservancy tanks with honey suckers and VIP latrines.

5.4.1.10 DM2

DM2 is another district municipality. It is supported by a Water Board and three local municipalities. One of the local municipalities is a WSA, the rest are WSPs. It serves a population of 1 330 436 (2016 community survey). For villages, basic sanitation includes septic tanks and pit latrines. Towns are connected to sewerage lines. They experience major backlog problems with sanitation.

5.4.2 THE MUSSA INSTRUMENT

The MuSSA instrument comprises a spreadsheet with 19 sections, a context section and one section for each Business Health Attribute. Under each Attribute there are five statements. Each statement has a number of response options.

5.4.2.1 Summary

Table 13 summarises the respondents' views on aspects of the MuSSA instrument. Direct quotes are marked *italics*.

Table 13: Summary of views on aspects of the MuSSA instrument

Municipality	Spreadsheet	Statements	Response options	Interviewer notes
M1	Easy to fill in	Clear	Clear	One of the respondents have used the online version. See detailed comments below.
M2	Easy to fill in	Very clear DWS visited them to explain statements	Very clear *In one or two questions, you see yourself in the middle of two options.*	Have used online version.
LM1	Very easy to fill in	Not so well grouped. *A bit all over the show, particularly in Context questions. Not all statements are clear.* But respondent could not give examples. Questions: comprehensive, not too many or too few	Easy, *makes sense*	Have not yet used online version

Municipality	Spreadsheet	Statements	Response options	Interviewer notes
LM2	Water: very easy Sanitation: easy Finance: easy	Water: very clear Sanitation: clear Finance: clear Legal: clear	Clear	At the time of the interview they were waiting for username and password for the online version. *I think guys with network connectivity problems should continue to use the spreadsheet.* See detailed comments below.
LM3	*Very easy because you can just select an option*	Clear	Very clear	Not aware of online version. See the detailed comments below.
LM4	Very easy	Very clear	Very clear	Not aware of online version. See the detailed comments below.
LM5	Very easy	Very clear	Very easy	*Very good questions, practical, direct to the point.* They only had to check one question
LM6	Not difficult; it just needs time	The statements are factual, and they work well. Prefer statements to questions. *It should not be a test*.	*Sometimes you fall between the response categories*	Have registered, but not yet used online version. See detailed comments below.
DM1	Very easy to fill in	Very clear	Clear	Aware of online version but have not yet used it. See detailed comments below.
DM2	Easy to fill in (after explanation)	Very clear (but depends on availability of data)	Very clear	Not aware of online version. See detailed comments below.

5.4.2.2 Detailed comments

Below are more detailed comments on the MuSSA instrument. Direct quotes appear in *italics*.

M1

The online version is easy and straight forward. It has a drop-down menu. The only thing is that while I populate the information, there is no option to say "save and return later" so you do not know whether it is saving your information as you are updating it. As you update, it tells you the status in percentage as you go along.

Statements*: You have to apply your mind when you fill it in. People need to be consistent with what they submitted on the Business Plan and Annual Report. If there are questions that are not clear, we have a session for clarity. There is no question that is impossible to answer. Some of the info required is already in the Annual Report.*

Response options: *They are clear. It is percentages so it is much easier especially if it is a target that is sitting on our IDP.*

M2

They got training on the MuSSA instrument, consequently they find the questions easy. A few difficulties with response categories: *Some are too broad, or you find yourself in the middle of two categories.*

No space allowed to give the context of responses.

There are many questions, and it takes a lot of time, but they are appropriate.

I can only comment on the comprehensiveness of the questions if I know what the purpose of MuSSA is. What does it want to achieve? It is just presented to you and you have to fill it in, but you don't know for what.

LM1

The admin official said that she is well enough informed that she can fill in the MuSSA spreadsheet without having to consult documents or people. *The spreadsheet is easy to fill in because the response categories do not require an exact figure; it gives ranges as options, for example, between 50% and 75%.*

LM2

- Sanitation: *Often I have to ask myself: What are they looking for in one question compared to another because some questions seem similar? We've come a long way with this tool from way back and it has been fine-tuned over the years. It used to be very vague. It used to be very big. Right now, it covers a lot of things that you can think of in the water and sanitation business.*
- Finance: *The questions are clear; we just need to determine if the information at hand will answer the questions.*
- Legal: *We just need time; we also had a challenge with staff, people have left, we have one person, the head, with a lot on his plate. However, the questions are clear. For me it is a bit difficult as I explained I am new, and we are having staff shortages.*

LM3

Not all statements are clear. For example, the one that asks about staff turnover. People associate turnover with finances. It is also subjective: what is a high turnover? *For me three years might be a low turnover; for someone else that might be high.*

The statements are very comprehensive and relevant. He would add a statement on the percentage of indigents. *From outside I might look good that I bill all my consumers, but if the paying consumers*

make up a small percentage of consumers, the revenue that I am able to collect would be inadequate.

LM4

He does not understand the purpose of all the questions. *What do these questions translate to?* He was not sure.

LM5

The WSA experienced problems with the online version. *It would hang for 20 minutes.* But it has been submitted.

He felt that it is a good idea that the online version does not show the previous year's responses, because *the guys would just look at the previous responses and just copy and paste.*

The respondent thinks that the questions are comprehensive, but some questions can be added. *Ask in what condition is your WWTPs. Our capacity is 38 ML, but we get much less wastewater, because we lose wastewater on the way, because of leaks. We lose between 15 and 20 ML per day. It is a big concern. Nothing of that is reflected in the questionnaire. DWS should know about this. Our WWTP in XX was out of operation for the past four years, but people still provided information as if there is nothing wrong with the plant. So, the questionnaire should ask: What is the condition of your plant? What is the condition of your reservoirs? What is the condition of your pump stations? How many ML goes into the plant per day? Is this accurate and if not, what is the issue?*

According to the respondent, this level of detail is essential if one wants to use MuSSA to motivate for funding.

Another question that needs to be asked is: How many kms of asbestos water pipes are still in use in your municipality? In 1991, legislation allocated funding to municipalities to replace all asbestos pipes because of the health hazard. 90% of municipalities are still using 95% asbestos pipes. The funds were used for other purposes. I fight daily to get the funding to replace our pipes.

LM6

For some questions, you have to use your discretion; the answer is not evident. For example, the statement 'You have sufficient technical management and technical staff' is problematic. What is sufficient? You can go back to your organogram and check how many posts are filled, but you still have to use your discretion.

The questions on water and sanitation are comprehensive.

DM1

In the opinion of the DM, one or two statements have too few response options. They believe that the statements are comprehensive.

Respondent 1: *The statements ask about the average situation and the response categories allocate a percentage to it. But, for example, if you have more than 30 schemes; most are working reasonably well, but a few (a small percentage) are really problematic, what % do you give yourself? The percentage could be correct, but not indicative of the gravity of the issue.*

On the other hand, they agree that, for strategic purposes, you need a high-level assessment.

Respondent 2 discussed the possible biases that could skew MuSSA results:

- *We do have the required number of people with the required certificates and experience on our works, but they are unable to produce the required quality water. So, what is wrong? How do you report on that? The same goes with similar questions about us as managers?*
- *Also, in terms of the process, you sit in a group and have to ask questions that reflect on your performance, you might tend to be more positive than it actually is.*

DM2
The first time, they did not know what to do. They did not know how to fill in the data on the spreadsheet. They had to phone DWS and ask. They have no issues with the content but would have liked to put comments for those statements where the responses are on the edge of two options.

5.4.2.3 .Respondents' recommendations
The respondents made several recommendations to improve the MuSSA instrument. See Table 14.

Table 14: Recommendations to improve MuSSA instrument

Municipality	Recommendations
M1	Add save and return later option to online version.
M2	Add a notes column.
LM1	Municipalities should provide evidence. See General comments and recommendations.
LM2	No recommendations.
LM3	Add a notes column.
LM4	Make the purpose of the different statements clear. *Understanding of the need is necessary.*
LM5	Add questions. See detail above.
LM6	*There needs to be a column where you can comment on how you have interpreted the question or the response.*
DM1	Add notes column.
DM2	Add notes column.

5.4.3 PROCESS TO COMPLETE THE MUSSA INSTRUMENT
Several aspects of the process to complete the MuSSA instrument, such as the communication flow, filling in the spreadsheet and what happens after submission, were discussed.

The findings on each aspect are set out below.

5.4.3.1 Communication flow

M1
The communication is sent to the City Manager's office. The Deputy Director: Water Services and a representative from the municipal entity is copied on the email. *DWS has done well in communicating and coming to us. They give us the timelines.*

M2
Their HOD receives the email from DWS from the Municipal Manager (MM) and distributes it to the Divisional Head for Planning, who then send it to his Deputy to distribute to the relevant people to fill in. The Deputy divides the questions between the five divisions: Water quality/Revenue, Operations, Support services, Finance and Planning. By the time, the communication reaches the Deputy, the deadline is close. They suggested that more than one point of entry to the municipality should be used.

LM1

The MuSSA communication is first received by the MM, who then forwards it to the Director: Infrastructure and he forwards it to the managers and so it is filters down to the admin person, who eventually updates it.

LM2

They (DWS) normally send us notifications to say we need to update it. Also, they follow up and make recommendations, e.g. on risks. So, I would give them 8 out of 10.

LM3

Respondent (Head: Water and Sanitation) gets the communication from the Executive Director: Water and Sanitation, who, in turn, received it from the MM. The office of the MM would have forwarded it to all the Directors, Technical Services, the CFO, Planning and Development. Respondent is the champion who coordinates the completion.

The information that we receive from DWS is clear, but it might not be so clear for the people from Finance. If the tone was awkward, I would have remembered it and I don't remember anything.

LM4

He is not sure if the communication came from the MM or directly from DWS to the Director. He received the spreadsheet from the Director. He has never seen the letter from DWS, only the spreadsheet. There was recently a request from the MM for a MuSSA champion. He is supposedly the champion. The Director has given him a free reign.

LM5

Communication is delegated from the MM to the Head: Water and Sanitation to the respondent (Manager: Water and Sanitation).

LM6

We get the communication from the provincial DWS office. The communication goes to us (Water Services), the CFO and Corporate Services. The MM is copied.

The communication is fairly comprehensive, it is user-friendly, it is straightforward.

DM1

The MM gets the communication and they hold off as long as possible until they are rounded up by the DWS regional office to complete the spreadsheet. Because it is chased by DWS regional, it is seen within the municipality as an engineering and not an institutional matter.

When respondent last had to do with MuSSA, in 2017, he passed it to the strategic manager as a strategic issue, and it sat there for a while without anything happening, and when the regional office started chasing it again, they organised a session and some people*, Grant Mackintosh and someone else came down, and we sat around the table and filled it in. It was circulated beforehand. That was the last time we sat together and that was the last time that we looked at the document.* They knew nothing about the 2018 completion process.

They have not yet acted on the 2019 request, but they have seen it.

DM2

The MM receives the assessment and forwards it to the relevant departments.

5.4.3.2 Who fills it in?

M1

HR facilitates the process and involves Finance, the Chief Information Officer, senior managers all the way going up the organisation. We also involve the CAPEX (capital expenses) manager who does infrastructure and investments. Communications and Stakeholder relations, Internal Audit and Bulk Supplier are also involved.

HR emails the relevant departments their sections of the document and they do their sections. We remind them of their answers from the previous year that they completed. We then collect it from the departments and discuss it with DWS. If there are any questions that we do not understand, we ask for clarity. For the past three years the DWS representative comes and we sit with him.

We give the departments two weeks' notice. There's only one department that normally takes long. It takes a lot of following up, others even escalation.

Fastest to respond: HR and Planning. *Planning because they only give two answers.*

Slowest to respond: *It depends on people and relationships you have with them*.

M2

They usually complete the spreadsheet at a round table meeting. They find the process easy because you can just compare with the previous score and decide where changes are needed.

For the 2019 update, they used the online version, which worked well, and they could immediately get their vulnerability score.

LM1

Different people in the various directorates fill in the different sections, but Water Services fill in the largest portion of the spreadsheet. The directorates are for example, the CFO's office, Directorate: Corporate Services, Governance. In all directorates, the actual completion is filtered down.

They use the previous year's answers as basis, and only alter responses if there has been changes. The respondent, who is the admin officer, would then send it back to the Water Resources Engineer, who would check it and send to Director: Infrastructure, who would also check it and authorise it before she can forward it to the MM's office.

Changes mostly relate to aspects that have a specific deadline and which are linked to the performance review and staff changes. They use the Ignite system to populate the SDIP and changes there are reflected on the MuSSA spreadsheet.

At the beginning of the financial year, they have a list of critical staff shortages, and this list is updated as posts are filled. She uses this list to complete the staff and skills questions. Their overtime records are also good indicators of skills shortages.

Compliance remains more or less the same, because, especially on the drinking water, you have to comply. *On the wastewater side our compliance was not good, but since the infrastructure upgrade it has improved with about 25%.* She uses the monthly compliance figures to complete these questions. These figures are also linked to the relevant officials' performance indicators. It is her task to upload these figures, so she has them with her.

She has no communication with the others who fill in the spreadsheet. The completed MuSSA spreadsheet is sent to the MM's secretary, who consolidate it and give it to the MM to review, sign and submit.

LM2

The first step is for the MM to inform the technical manager that the MuSSA spreadsheet has to be submitted (but not much gets done at this point). A follow-up is done by the MM when DWS follows up. It is sent to the unit manager who calls on everyone to participate in MuSSA. *That's the reality of our municipality.*

When we receive it, we invite everyone involved, i.e. HR, IT, Finance both BTO (budget and treasury office), budget and billing, technical side, we invite water and sanitation, there is also legal, risk, i.e. all parties are involved. However, you find that the only people that attend are the ones in this room right now. The others don't even pitch. They don't see their relevance and impact in relation to water, sanitation and provision.

We inform them of their importance participating even with this meeting, they are invited but have not attended.

Prior to attending the meeting, we need support from management; much as this is a technical template, management must own it as part of monitoring and evaluation of the whole municipality.

Like now, senior management was invited however they have not come. We are middle management.

In the past we would sit with the MuSSA champion because we did not know how the information is populated, so to be safe is to sit together; then afterwards others need to check on figures to confirm, when there is anything else missing, then individual areas confirm and we consolidate. However, the champion will do the follow-up on individual departments.

When everyone is on board, it takes two days to complete; however, when others are not there and we need to send reminders, it takes till the last reminder; normally the MuSSA spreadsheet is sent to us in July/August and they remind us of submission in November. Sanitation is completed within a day; water provision and the treatment plant take about two hours; for finance, I collect from others not attending, so it depends on them getting back to me so it can take a whole week. Sometimes, I even have to escalate.

Fastest to respond: Water Services and BTO.

Slowest to respond: *Legal.* Legal person: *We have not had staff as mentioned.* Someone else: *They have been slowest even when they had adequate staff.*

LM3

I complete our sections and then I forward it to Finance and Strategic Planning (section 16) to complete their part. Technical Services completed the Context section, also the Customer Care section. After completion, I will check everything before returning it to the MM's office, who submits it to DWS.

They look at the previous year's responses and only make changes where there was a change.

We manage to meet the deadline. The questions are quite lengthy, but relevant. In my case, some of the answers are readily available; for other questions I have to phone the assistant-directors for the answer. For example, whether we have a scarce skills policy, I have to phone HR.

It takes a lot of time to complete the form. There are many questions and for some answers you depend on other people in the municipality to get the answer.

LM4

The respondent (Manager: Water and Sanitation) completed the entire spreadsheet. He was only three months in the department when he updated the spreadsheet. *There was not much to be updated*. *It was not a straining exercise.*

He was very close to the deadline (or over the deadline), because it was a secondary priority. In previous years (year?), DWS visited the municipality and it was completed in a work session with everyone involved. This approach works better for them.

His previous director was more involved in MuSSA. He is now with DM2.

LM5

The respondent is the MuSSA champion. Instead of trying to get people around a table, he goes physically to the CFO, IT and other relevant departments with his laptop and sit with them to complete their part of the spreadsheet. *If you don't go to them, you don't get it back from them*.

The CFO would have his laptop open, so he can get the information that we need to answer the questions. It takes us about four hours. IT would do the same.

The rest I fill in as accurately as possible. It takes about 1.5 to 2 weeks to update the entire MuSSA spreadsheet.

Once completed, his executive manager signs it and sends it through to the MM.

LM6

I coordinate the completing. Because it comes from DWS, everyone thinks it is for us, even though it is also sent to Finance, Corporate Services. So, we start with it. I sit with them, but at times, they do their part on their own and we sit together and complete it. The latter works the best for me.

The information is not readily available, we have to consult files or reports to get information. That is the unfortunate thing about government. You have various sectors collecting the same information, whereas this information could be collected just once and made available to all who needs it. Instead you are called upon to complete templates upon templates.

The CoGTA Back-to-Basics tool, which they have to complete, is useful for them to refer back to when they complete the MuSSA spreadsheet, for example, the backlog figures are readily available in the CoGTA reports. The Finance information is available on the financial system.

How long does it take them? *We battle to complete it on time. We don't have the capacity. We don't have enough technicians.*

DM1

When the respondents were involved in 2017, the spreadsheet was filled in in a meeting, facilitated by Emanti and DWS. See notes in previous subsection.

DM2

It is an individual chain effort. They fill in their relevant part and forward it to the next person. A meeting would be better to engage with all stakeholders. The respondents only filled in the infrastructure and water quality questions and some of the context questions. Within their

department they discussed the questions, especially those on the edge of two response options. It took them about two hours to complete.

5.4.3.3 What happens after submission?

M1
The respondent said that they write a report to National Treasury. *We get a feedback report which we take to the Board.*

M2
They found the MuSSA tool comprehensive, but they are unable to translate it into action. They do nothing with the report.

LM1
Nothing. Then we wait until next year when we have to do it again. We don't get any feedback. Perhaps the report goes to the MM, but I have never seen a report. You can ask the MM's secretary or the official from Governance. I don't think the feedback is filtered back into the various directorates.

The Water Resources Engineer searched on the website to find their MuSSA report. He could only find the general report of 2015. *Few people know about MuSSA. There are so many parallel processes that, unless you are directly involved in MuSSA, you won't know about it.*

LM2
The areas where they have found us vulnerable in the last financial year, those areas are what we have problems within the municipality, issues of revenue and collection, they are a challenge for the municipality. Also, the issues of water losses, they have highlighted them as their findings, which we are really struggling with.

They did not say what they do with the report.

LM3
The MuSSA report is sent to the MM, who will then forward it to me. I've completed the spreadsheet, so I know where our main challenges are, for example our effluent quality is not compliant. It is up to me now to raise this risk at the IDP review process; we need to upgrade the WWTP; this is the budget that we will need. The MuSSA report will <u>not</u> tell me what to do; it will only tell me where the problem is.

LM4
I send it to Chris and forget about it. They do not discuss the report. He faintly remembers seeing the spider chart.

LM5
Once the report is generated, either Council must drive improvement, or the State must intervene.

The MM is aware of MuSSA and we use it to request funding from national. The respondent repeated that Council uses the MuSSA findings to request funding. He would like to request funding from DWS to replace the asbestos pipes, but without a question on MuSSA, he just gets the response that he should pay for it from their maintenance budget.

They have never received additional funding directly as a result of MuSSA, but indirectly, yes, the MuSSA report has assisted them to get funding.

LM6

The respondent feels that DWS should follow-up on the report (because currently nothing happens after submission). They are a low revenue municipality; payment level is low; they use the equitable share for most of their functions.

DM1

In 2017, they saw the report and the spider chart. The vulnerabilities were brought to the attention of the WSDP, but they don't know if the vulnerabilities were discussed formally. A consulting firm was contracted by MISA to assist the municipality with their turnaround strategy and they made use of any document they could lay their hands on. They probably also used the MuSSA report.

The MuSSA report was not used for any other purpose.

DM2

Nothing. They don't remember ever seeing the report or the spider chart.

5.4.4 Timing of MuSSA

Table 15 shows that respondents had different views on the best time of the year for the MuSSA assessment.

Table 15: Views on best time for MuSSA assessment

Municipality	Response
M1	*There's never a good time.* *The only thing that one must do is set up a good appointment with the departments for response time. The current timelines they give us are reasonable.*
M2	The IDP is adopted by the end of May, but the consultations start around February. The first draft is published in March; they would therefore want the MuSSA report in November to give them enough time.
LM1	No issue with current timing.
LM2	Their deadlines are reasonable and adequate. There's not a lot of information you have to look around for with hassles. *The current submission of November is fine.*
LM3	Timing is important. *We do our planning every 5 years and we review our IDP annually. The MuSSA should coincide with our IDP review process. It would be good to receive the report by November, because we review our IDP and planning for the year between November and February. MuSSA should be completed after the end of the financial year.*
LM4	No issue with current timing.
LM5	Second quarter of year is the best. March, because then it is ready when they reflect on the year.
LM6	The IDP starts in the beginning of the new financial year. Therefore, it would be good if MuSSA could be done in March.
DM1	No issue with current timing.
DM2	*MuSSA could be a good tool to cross check areas in the IDP process.* *The best time to get the report would be Sep/Oct.*

5.4.5 UNDERSTANDING OF MUSSA

Respondents had a range of views on the purpose of MuSSA as is evident in their responses below.

5.4.5.1 Why are we doing this? What is the purpose of MuSSA?

M1

It is an indicative tool where we self-assess and check our past activities as a benchmarking exercise to see where we are in relation to identified risks and the national Department.

It is a form of a questionnaire completed by municipalities at high level to assess a particular period and what areas a municipality is having challenges in. It looks at the entire operation of the municipality, its investment, finances, human resources and entire value chain.

It is a tool and not an audit. An audit requires that you submit supporting documents. We don't get asked for supporting documents with MuSSA.

MuSSA is generic and covers all municipalities for public knowledge. You will only be in trouble if you do not answer things that are not done by this municipality or if you are misleading DWS.

What does DWS do with the information?

That is a good question. I think the information is more to assist us. I never really thought what they should be doing with it. They have developed it as a tool to support municipalities as to think about what they are doing as a municipality.

It is to check the status of municipalities and where DWS can intervene. It looks at whether the municipality is self-sufficient and self-sustainable.

M2

The respondents were unsure of the purpose of MuSSA. One respondent called it a self-assessment; another called it a performance assessment by DWS.

In the case of MuSSA, you come here, you do the assessment, you park the report until next year, and next year you will do it again.

What does DWS do with the information?

They have no idea.

LM1

MuSSA translates the national KPIs (Key Performance Indicators) into local KPIs. MuSSA is a national instrument of National Treasury that they use to assess our performance and what are the problems that we are experiencing. And to establish what are the reasons for non-performance. Do we have enough staff? Are our bylaws in place? It combines the HR function with Operational.

We report to provincial and provincial reports to national.

What does DWS do with the information?

The respondent speculated as follows: *They (NT) gets all the information, which enables them to compare municipal performance and identify problem areas*. Towards the end of the interview the respondent asked: *What is the purpose of MuSSA? What do they do with the information that we send through*? When the interviewer asked what she thought she said: *I have no idea*.

LM2

From the water side, MuSSA is a mandate of water and sanitation at the municipality. It looks at the overall operation, the financial component and IT. It does not just look at the technical side.

From finance, how much we are billing; the actual figures that pertain to water and sanitation.

A tool for monitoring and evaluation for the performance of the municipality.

What does DWS do with the information?

- *It looks like they use it for compliance and bonuses.*
- *DWS also uses it in verifying our competence in delivering basic services; are we addressing the backlog, assess vulnerable issues, however the budget is not adequate to achieve compliance.*
- Legal: *They use it for compliance to minimise risk. Do we comply with our contractual obligations?*

Do you think MuSSA serves its purpose? *It does. The process must be channelled to engage senior management. We must carry on using it as a WSA. However, senior management must understand the impact of the tool so that when there are protests in the communities, they understand that they had MuSSA challenges that they did not attend to.*

LM3

It is a self-assessment tool. It looks at a WSA to say how able are we to manage a WSA? It looks at technical, financial and other issues. It is just for us to assess ourselves and to reflect on how do we perform?

How does MuSSA differ from other assessment tools? *The other assessment tools like the Blue Drop and Green Drop are regulated. MuSSA is non-regulated. Information is fed into the tool; it is not tested. It is just us reflecting on ourselves.*

LM4

The respondent regards MuSSA as an information sharing tool, but he could not place a specific need or function to it.

What does DWS do with the information?

Good question – he would like to know. They collect all the data, but what enforcements do they have in place to make sure there are improvements?

LM5

MuSSA establishes what the municipalities have and what they can afford and what they do not have. Also, what are the limitations and what kind of support does the municipalities need from national. *This is why we try to complete it as correctly as possible.*

DWS uses it as a diagnostic tool to assess the performance of municipalities.

LM6

It is about understanding the water sector, whether we have the capacity to deliver water services to our communities. The information does not stop with us. It goes to the provincial executives, it goes to SALGA, it goes to the planning commission. I think it assists the planning commission to understand the municipal environment.

He has no clue what DWS does with the information. *I guess they use it for their planning.*

DM1
It is a self-assessment tool. It does not require us to provide proof or evidence of our assessment. It is just for us to give our understanding of where we are. I have been battling with the purpose of doing this. Sometimes it is in the interest of Engineering Services to paint a bleak picture, because it highlights to management that we need attention to certain issues, on which might have been difficult to get their attention. The accuracy of the information is for me an issue. The respondent is not sure how useful the MuSSA information is for planning purposes.

There are a number of other (evidence-based – implied) *tools that are more useful for planning purposes*.

Second respondent agrees that the MuSSA results have a high degree of subjectivity: *If you ask how the Finance guys are doing and you ask the Finance guys how they are doing; you will get very different answers. Also, some individuals will paint a more positive picture in a self-assessment than others.*

As a self-assessment tool, the subjectivity might not matter. We used it once as the basis of our WSDP planning session as a discussion tool and that was quite useful. However, we lost our way in the last couple of years in terms of strategic planning sessions, we struggle financially and there are a number of other issues. So, at the moment, it is just another tick box. We arrange a session, quickly fill in the documents, send it back and that is that.

We used another tool to get some more funding (by painting a bleak picture – implied) *and it backfired a bit, because the report reflects badly on us as management*. *That was not the intention of how we reported; we only wanted to highlight certain issues.*

DM2
The purpose is for municipalities to assess themselves in terms of their water business. Are we doing well? Where can we improve?

From their point of view: DWS does not seem to take MuSSA seriously. They don't know the value chain. *Where is the data going and what are the outcomes*? They don't get feedback and they don't know of the report.

Why then does DWS do MuSSA? *It is probably in someone's KPIs in the Department.*

5.4.5.2 Difference between vulnerability and risk

The respondents' perceptions of the difference between vulnerability and risk were explored. Table 16 shows that they find it difficult to distinguish between the two.

Table 16: Difference between vulnerability and risk

Municipality	Response
M1	*Vulnerability assessment is more of an indicative tool to show the status quo where a risk assessment is done to put a Risk Register in place; it is like a self-assessment and an audit, although not similar intent.*
M2	For them risk is the same as vulnerability. If you are vulnerable, you are a risk.
LM1	Not asked. Respondent has never seen a MuSSA report. Her superior had to look for the report on the internet.
LM2	*Risk is something we can identify with and work on. However, vulnerability is something that can blow up in your face.*

Municipality	Response
LM3	Respondent called the spider chart in the MuSSA report a risk matrix. To him, risk and vulnerability are the same.
LM4	Not asked – they have not seen a MuSSA report.
LM5	*Vulnerability is what will happen definitely; risk is what might happen.*
LM6	Same as risk
DM1	Respondent 1: *they are the same. It should rather read ''your risk''.* Respondent 2 agreed: *All your other plans talk about a risk-based approach*.
DM2	Not asked – they have not seen a MuSSA report.

5.4.6 The usefulness of MuSSA

Several aspects on the usefulness of MuSSA were explored in the discussion. The findings for each aspect are set out in the tables below.

5.4.6.1 Buy-in from senior management and Council

How do senior management and Council support the MuSSA process? Table 17 shows the respondents' answers.

Table 17: Buy-in from senior management and Council

Municipality	Response
M1	*For Council, it is for noting water security issues highlighted as a high risk. We are asked what we are doing about it.* *People (from the different departments) submitting and responding with the information does not necessarily mean that they understand or appreciate the value of MuSSA.*
M2	*Unlike the audit report, which is tabled in Council, the MuSSA report does not go anywhere. I doubt it if Council knows about it. Executive management in the Water department knows it, but I am not so sure if executive management in the other departments know about it.*
LM1	Senior management knows about MuSSA, but respondent does not think they know the purpose.
LM2	*The issue is the misunderstanding of the whole process. If higher management does not understand the impact and process of MuSSA, there will be no follow-up. It is not the only process that suffers because senior management does not understand.* *Senior management needs to take ownership and understand why MuSSA needs to be done. So, if it is on their KPIs then they may take it seriously.* *It would be better if there was a workshop for senior management to understand the importance and of the MuSSA tool.*
LM3	*People do things for them to comply. If this MuSSA assessment has no element of compliance, then it will go slow. It does not become a high priority. MuSSA does not appear in performance management; hence a low level of commitment.*
LM4	It ends at his level. Also, judging from the request about a MuSSA champion from the MM; nobody has responded. No understanding at that level of what the tool is or the requirement. Not included in KPAs (Key Performance Areas).
LM5	*Buy-in from senior management in Water and Sanitation and the MM is very good – 90%. The rest of the guys are not interested and don't want anything to do with it: Because MuSSA comes from Water Affairs, the other departments*

Municipality	Response
	think it is Water and Sanitation's problem and they're not interested. Even Finance, when you ask for a meeting, he gives a sigh, but he does it, not with a smile, but because it is part of his work. *The MM is aware of MuSSA and we use it to request funding from national.* In the respondent's view, MuSSA is used for this purpose. .
LM6	*Generally, very little understanding and buy-in. Everyone sees it as a Water and Sanitation baby. I doubt that Council knows about it, except perhaps the MEC (Member of Executive Committee). I don't think they understand it. Except maybe the full-time Councillors.*
DM1	*These reports are drafted at our level (Water and Sanitation services), and we're not convinced that our colleagues from the other units, or top management, for whom these reports are intended, have a good understanding of the issues and the purpose of the report. We don't know if they interrogate these reports at all or is it just another report for noting.* *At the moment, it (MuSSA) is not particularly useful.*
DM2	Low level of commitment and buy-in implied. See other responses.

5.4.6.2 Use of MuSSA reports and spider charts

How are the MuSSA reports and the spider charts used in the WSAs? Table 18 gives the respondents' answers.

Table 18: Use of reports and spider charts

Municipality	Response
M1	*It's a good summary of the performance and where we need to focus our energies at a high level; it is a dashboard. We submit mitigation plans on it.* What do you do with the spider charts? *The spider charts are simply part of the report however we submit the whole report to the Board.* *Since we already know everything on the operation, the usefulness of this is then a reminder for us because it goes to political channels so you would have someone in Council asking questions, so it reminds us that we are aware of what we need to do. As a self-assessment we are able to say we have been sitting with this red for a while, are our interventions working?* *We know operation and maintenance are the areas where we need to put more emphasis of resources. So, all of this information on spider chart is known to us.*
M2	For them, MuSSA is a diagnostic tool only; they are not able to transform it into a planning tool. They agreed that it should be aligned with their IDP process. The respondents struggled to interpret the spider chart. For example, they had no idea why they got 55% on the vulnerability chart for Financial Asset Management.
LM1	Not applicable. Respondent has never seen a MuSSA report. Her superior had to look for the report on the internet.
LM2	*The spider chart is fair and also not fair. It will show that you are doing fine when you are not and does not consider the budget constraints. The challenges are not properly highlighted so that the municipality can work on those areas.* *We are tired of going to the accounting officer on not meeting our targets.* *I thought matters on the spider chart are only strategic issues. I thought it is a summary of what we had already discussed.*

Municipality	Response
	It is not so useful. It is not detailed enough. I would prefer all budget issues to be outlined. You can be in the green zone but also highlight areas where improvement is needed.
LM3	Respondent felt that spider chart is not an accurate reflection of the municipality in Business Attribute 8 (Basic sanitation), but he admitted that their own scoring was not accurate.
LM4	Faintly remembers seeing the spider chart. He does not know the purpose of MuSSA or how it should help them. *There has to be a way to introduce MuSSA – why is it necessary, what does the results mean and how will it assist us?*
LM5	Respondent felt that the spider chart is an accurate reflection of the weaknesses of the municipality.
LM6	*I have seen the report once. It was presented at some forum. I have not seen last year's report. It could be my fault that I did not follow-up. Maybe it was sent to the MM.*
DM1	The 2017 report was probably used in the municipality's turnaround strategy. They have not seen the 2018 report.
DM2	They don't remember ever seeing a report or spider chart.

Table 19 shows the recommendations that the respondents made about the MuSSA report and the way it is communicated to the WSAs.

Table 19: Recommendations about MuSSA report and communication

Municipality	Response
M1	No recommendations
M2	No recommendations
LM1	Must go directly to administrators who completed it and filter down from MM.
LM2	The tool could be used as a Scorecard by the MM to evaluate and monitor the business health of the municipality.
LM3	No recommendations
LM4	They have not seen the 2018 report.
LM5	No recommendations
LM6	*My gripe with all these templates is that the feedback is late. By the time you receive the feedback, it is time to complete the next one.* *There is no follow-up.* See General comments and recommendations.
DM1	They have not seen the 2018 report
DM2	They have not seen the 2018 report

5.4.6.3 Municipal Priority Action Plan (MPAP)

Respondents were asked if the WSA has an MPAP and how it was developed or why it was not developed. Table 20 below reflect their responses.

Table 20: Municipal Priority Action Plan (MPAP)

Municipality	MPAP	Explanation
M1	No	-
M2	No	-
LM1	No	-

Municipality	MPAP	Explanation
LM2	No	-
LM3	No	Respondent felt that the MuSSA charts are too high level, it does not guide you towards an action plan.
LM4	No	Will need assistance to develop action plan because it would be important to clearly define who is responsible to do what. Also, *what happens if nothing gets done?*
LM5	Yes	*We were ready to implement it, but then someone from DWS said we were advanced and should wait until more municipalities have MPAPs.* And then nothing happened further.
LM6	No	-
DM1	Yes	*An MPAP was developed in 2017 when MuSSA was facilitated by DWS. Actions, time frame and responsibility were allocated. Some managers might have taken individual action into implementation, but it does not feed into any of Council's processes, so it is of no consequence and falls by the wayside.*
DM2	No	-

5.4.6.4 Alignment with planning processes

How is MuSSA aligned with the WSA's planning processes? Table 21 shows the respondents' answers.

Table 21: Alignment with planning processes

Municipality	Response
M1	*It is the difference of what we do good and where we have challenges. If you look at our IDP and Annual Report, we look at what we have already said. Spider chart is already what we have presented.*
M2	No alignment
LM1	No alignment
LM2	Not mentioned
LM3	*After we received the MuSSA report in 2018, we wrote a note to Council. The MuSSA report gives you a risk rating. The only way for Council to address that is if it becomes part of the IDP review. Hence the importance of the timing of the MuSSA report.* ***The risk matrix in the MuSSA report does not empower you to link the failure to specific action. It shows you where the failures are, but not what actions you should take*** (emphasis added)*. Whereas with the Green and Blue Drop reports, you would know exactly what action to take.* *It is good for a MM and a Council to see a high-level assessment, but there is no legal framework that would force Council to take the assessment to action. The Drops are legislated, and they are widely known, so Council would ask why we do not have a Drop, and then you can say what you need to perform.* *The MuSSA is just there to give you information; it does not encourage action.*
LM4	No alignment
LM5	See other responses
LM6	See other responses

Municipality	Response
DM1	*There are other tools that talk more directly to operational issues, like the Drops. They talk to the details of compliance. Compliance is mentioned in the MuSSA spreadsheet, but it is high level only. The Drops have far more bearing on our operational work and therefore it was more useful as a management tool. It was also practical and useful to give you guidance in your day-to-day activities.* *There has been an attempt to use MuSSA, but I don't think it has been successfully used as a strategic planning tool.*
DM2	No alignment

5.4.6.5 Alignment with Risk Register

Respondents were asked about the WSA's Risk Register. Does it exist and how does it work? Subsequently they were asked if and how MuSSA is aligned with their Risk Register. Responses below illustrate the diversity of practices.

M1

The Risk Register is used to manage and achieve the risk objective on day to day operations.

No mention of alignment with MuSSA.

M2

There was a difference of opinion. MuSSA champion said that the Risk Register informs the completing of MuSSA; another respondent said that issues identified through MuSSA should go into the Risk Register. *With the Risk Register, every risk translates into an action plan, whereas issues identified in MuSSA is an exercise that ends there.*

LM1

Risk planning: *We use risk planning; we have a Risk Register and risk officer. The Risk Register does not really help us in practice. I can just remember one instance when it was updated*. She is unsure if the Risk Register is functional. She does not know if the W_2RAP is used.

No mention of alignment with MuSSA.

LM2

On the technical side, we understand what is required. Other directorates do not fully understand the purpose of the Risk Register.

No mention of alignment with MuSSA.

LM3

They have a Risk Register. They call it a Strategic Risk Register. When they review their IDP, they also review the Risk Register and identify risks, for example security of water supply in a particular area. This is a once-off annual exercise. They will then identify mitigation actions and report on progress on a quarterly basis. They also have an Operational Risk Register, which deals with operational issues.

No mention of alignment with MuSSA.

LM4
They have a Risk Register, but they do not have the resources to deal with risk. They are able to deal with some aspects; for the others they "pray for mercy". The MuSSA results do not inform the Risk Register.

LM5
MuSSA will support us if our Risk Register is in place. We have a Risk Register. Once a year we do a new Risk Register; after six months we update it. It is part of their IDP reviewing process.

LM6
Municipality does not have a Risk Register.

DM1
We have a Risk Register. We have a risk manager and the Risk Register is updated on a monthly basis. Every year we discuss what we've put in the Risk Register, and then we move onto another year of filling in the Risk Register.

MuSSA is not aligned with the Risk Register.

DM2
No alignment.

5.4.6.6 How do you assess yourself and do your planning?

This question was added when it became evident from the first two municipal visits that MuSSA is not used for planning purposes. The research team then asked respondents which tools they used for planning purposes.

M1
Internally (at the municipal entity) we have the Managing Director's (MD) dashboard which looks at our Balanced Scorecard, aligned to the business plan for the year. He (the MD) looks at the dashboard on a monthly base.

The city (municipality) has a similar dashboard.

M2
They use the annual IDP review process to do their planning.

LM1
There are a myriad of planning and improvement programmes that are being implemented in municipalities to address problems with service delivery. But no plan or programme can stand in for or replace the required skills. It is an artificial exercise that will not have results.

What process do you follow in the municipality to assess yourself and to plan for the next financial year/next 5 years? The respondent referred to key performance areas that are defined and key performance indicators (KPIs) that are formulated for each KPA. Eventually, the managers are given these KPIs and targets as part of their performance agreements, and then *we measure our performance in the performance reviews.*

We use the IDP and WSDP for our annual and long-term planning. Management and consultants review the IDP and WSDP and make the necessary adjustments for Council to be approve. The annual report is a very important document, which is submitted to the Auditor General (AG) and the feedback is used to plan for improvement.

The engineers know what they want to do to achieve our targets, but the support services (Finance, HR, supply chain) must give their support to make this work. If there is insufficient budget or posts are not filled, we can't execute plans successfully. If they don't process our orders in time, it is all in vain. And that is what creates friction. They don't understand service delivery; they focus on administrative processes. They don't understand that we need to do emergency repairs.

Water Resources Engineer: What is the most useful instrument for self-assessment and planning? *The SDBIP (Service Delivery and Budget Implementation Plan)[15] is the most important feedback mechanism for the MM and Council. The IDP is one of the inputs into the SDBIP and the SDBIP monitors the implementation of projects listed in the IDP. Compliance is included as a KPA and KPI, and HR, but skills are not reflected in the SDBIP*. He thinks SDBIP has been developed by National Treasury.

Assessment of business health: Their self-assessment is based on performance targets achieved and the feedback received from NT. See also the response above.

Water Resources Engineer: Municipal Money, the NT website is for them a useful tool to assess and compare their financial health.

Where do you get an integrated picture of all aspects? *In our annual report*. *The report that we get back from the AG is our measurement tool. The annual report and the feedback from the AG are our starting point when we do our planning for the next financial year*.

What is the most useful tool for you to function well? *Ignite/ SDBIP, IPS2 tools, the provincial performance indicator document*.

What is the least useful tool? *MuSSA, because few people know about the report. If more people know about MuSSA, more value might be attached to it. Also, if it required evidence, it might have more standing in the municipality. At the moment, everyone just fills it in.*

LM2

We had the Blue and Green Drops which were useful. They kept us on our toes in a good way because we would want to shine and get the certification so the municipality would get the budget to be able to shine.

We were one of the few municipalities who got the Blue Drop certification and we had continuous improvement every time we were assessed.

There is also the SAGE system for financial reporting. It is a financial system that was introduced last October.

LM3

They use the annual IDP review to do their planning. Planning is linked to individual performance through an Individual Performance Management System (IPMS).

LM4

They start their annual planning with a status quo analysis in September. This intervention runs until the IDP and budget is finalised and presented to the Council in May of the following year. They have to be realistic about the budget and they lose a lot of 'things' (priorities) along the way.

[15] The respondent called it a Spatial Development and Budget Plan

Tools: *The Blue and Green Drop are good measures for reporting results and achievement of KPIs. Without the Drops, no one wants to say they are doing badly nor want to assign any reasons for their bad performance.*

LM5

Every year we do our planning and the budget that we require, but we only get some of the funding that we request. For capital projects, we get nothing. We only get money for reactive maintenance. Previously the respondent mentioned that DWS provided funding for the upgrade of one of their WWTPs. Because the municipality does not have funds; they seek grants from other sources.

They have many informal settlements and their indigent population grows as mines close. As a result, their income base decreases each year.

Their WSDP has expired.

They do an annual IDP review, but they can only implement what they have money for. There is no money available for any new initiatives.

LM6

They use their procurement plan for planning what skills and materials they would need for the following year.

DM1

Respondent 1: *Our planning has been skewed towards infrastructure development and not to compliance. Our effluent compliance is very poor; we don't need any tool to point that out. Most of our plants work over capacity, so we plan to upgrade or address some of the issues. We have not yet planned systematically the entire lifecycle of our business.*

Respondent 2: *Support departments and academics don't understand how municipalities are operating on a day-to-day basis. All the different questionnaires, back-to-basics questionnaire, etc., everybody is trying to assess our performance or to help us. First of all, there are very few staff who can attend to these questionnaires, so they land on our desk, and then there are all the daily operational issues, and the daily crises. But the institution is audit focused. Our key drive is to comply with the audit. It is not a priority to look in-depth at how we are doing and how we should be doing. A clean audit or an unqualified audit is the priority and the main objective. Whether water comes out of the tap is irrelevant from an audit point of view. All they are interested in is whether you followed the correct procurement procedures to get the tap.*

The focus of executive management and Council is not toward this type of thing (a comprehensive self-assessment of business health – implied)*. The focus is on compliance; compliance with the audit and anything else that needs to be complied with, because that is how municipalities are assessed.*

We should be using this tool for our annual strategic planning sessions, but there is a specific formula that we are using. Vision 2058 has been the basis of our strategic planning for the past two years. Very little of that concerns our core function.

DM2

Their risk analysis runs concurrent with the IDP process. Risk management committee sits around a table, makes a list of issues and prioritises them. During the IDP process, they have a number of sessions with communities and NGOs (non-governmental organisations) to list and prioritise issues. These issues become the basis of their planning.

5.4.7 CONSULTATIONS WITH THE PUBLIC

All municipalities said that public consultations are part of the IDP process as regulated. They do not have another public consultation process.

The respondent from LM3 was the only one who expressed interest in the OECD Water Governance Indicator Framework.

5.4.8 COGNITIVE INTERVIEWING

It is important for the data integrity of MuSSA that the variation in how respondents understand and interpret statements is small.

The cognitive interviewing therefore investigated if respondents:

- Have the same understanding of the statements; and
- Interpret the response options in the same way.

As explained in 1.2, the cognitive interviewing was integrated into the municipal interviews. There was not enough time to interrogate every statement and its response categories; a sample of statements across attributes were therefore selected. For some WSAs, additional statements were selected for the cognitive interviewing if the WSA gave a response in the 2018 MuSSA that was notably different from the other WSAs.

The findings are set out in the tables that follow.

5.4.8.1 Context statement 31

Context statement 31 is particularly important for WSA's implementation of the MuSSA findings. It asks if the WSA has integrated their vulnerabilities into their Risk Register and their risk mitigation process. Table 22 captures the diverse responses to the probing questions. Probing questions are marked in **bold**.

Table 22: Cognitive interviewing results for Context statement 31

Context statement 31:	**Those of your 18 MuSSA Business Aspects which reflect Extreme and/or Highly Vulnerable, are included within your WSAs Corporate Risk Register**
Probing questions	**How did you interpret Q22 and how did you get to your answer? Which of your MuSSA responses was noted in the Risk Register? How is the Risk Register used in this municipality?**
M1	*We spoke about the water demand exceeding the supply as a risk as part of the top ten risks we have. How the Risk Register is used to manage and achieve the risk objective on day to day operations.*
M2	Not the same understanding. Planning thinks they must use the Risk Register to fill in MuSSA; representative of Projects said exactly the opposite.
LM3	*I am not sure which aspects they refer to.* Respondent did not recognise the 18 Business Aspects. Respondent thought the question was referring to a specific question.
LM5	*MuSSA will support us if our Risk Register is in place. We have a Risk Register. Once a year we do a new Risk Register; after six months we update it.* It is part of their IDP reviewing process. **The response was ''partially in place, but not ideal'', what does this mean?** *We had a meeting, but the Risk Register has not yet been approved for the year. I take the MuSSA report to the Risk person and we discuss it.*
LM6	Municipality does not have a Risk Register; hence question is not relevant.
DM1	*We have a Risk Register.* **Do you use it?** *That is a good question. In a proper planning process, the Risk Register should feed into the planning process to put mitigating measures in place. We have a risk manager and the Risk Register is updated on a monthly basis.* *There is an attempt to make it useful, but it is a document that I respond to quickly on a monthly basis; it is not something that we are actively addressing as key priorities. None of my staff would know what our key risks are. What I do on the Risk Register has no bearing on anyone else in the division.* *Every year we discuss what we've put in the Risk Register, and then we move onto another year of filling in the Risk Register.* MuSSA is not aligned with the Risk Register.
DM2	*It is impossible to answer this question if you don't have the previous year's report (*spider diagram*).*

5.4.8.2 Technical skills statements (Business Health Attributes [B] 2, 3 and 4)

Table 23 deals with responses to probing questions about the WSA's technical skills capacity at managerial and operational levels. Probing questions are marked in **bold**.

Table 23: Cognitive interviewing results for the technical skills statements

M1	**Why did you fill in 'not applicable' for 3.1 and 4.2?** *We don't operate water treatment works so it is not applicable.*
M2	**What does it mean for an organogram to meet your business requirements?** *Your business requirements are your strategy, in other words, the actions taken to achieve what you need to achieve. Everything else must respond to what we need to achieve. If we say we want to provide water 24 hours a day, then all actions must support us on delivering on that objective. Our organogram is one of the tools that we use to deliver on our objective.* They make use of service providers to complement skills. So, they might have 50% filled posts, but all they have all the skills that they need.
LM4	**What does this mean to you: ''Your technical management organisation organogram meets your business requirements''? How did you get to your answer? Why then do you have the lack of skills that you indicated in 2.3?** *It means that the structure is user-determined*. The needs of the municipality are considered to formulate the structure and determine the key appointments. The appointments that they have made are mostly plumbers. Therefore, there is a lack of skills (indicated in 2.3). They have to look for electricians and mechanical specialists from the outside. *On the structure (the organogram) you have what you have defined, but in the job, there are gaps, i.e. lack of skills. Business requirements change over time, but reviews of the structure do not happen quickly.*
LM6	**What does it mean for an organogram to meet your business requirements?** *You need certain skills and capacity to deliver on your mandate; the organogram must provide you with those skills and capacity.* **What is the problem, the organogram, the skills, the number of people appointed?** *In some cases, the organogram does not specify the capacity that you need, for example two people to run a WWTP full-time. That is insufficient and does not meet our business needs.* **Why are you lacking skills?** *We don't have the funds to fill the posts. CoGTA and provincial NT would say: why do you put positions on your organogram that you know for sure you can't fund? There is a lack of understanding of the business requirements and the budget to fill posts.* *I have found that people outside the technical side of water and sanitation do not understand the processes required to have water in the tap. For them, they just want water in the tap.* 4.2: **What does the 0% mean?** *We are non-compliant. The numbers are not appropriate. We are supposed to run 24 hours, but with the numbers we cannot do it.*
DM1	**What is an organogram that meets your business requirements?** *Business requirements would be based on your key performance indicators. Such an organogram would address all the functionalities such as water resources, WRM, Water Demand Management and Conservation, asset management, water care, etc. and the KPIs.*

5.4.8.3 Drinking Water Safety and regulatory compliance (B7) and Wastewater/Environmental Safety and regulatory compliance (B9)

Table 24 captures responses to probing questions on the drinking water and wastewater/environmental safety sections of MuSSA.

Table 24: Cognitive interviewing results for the drinking water and wastewater compliance statements

M1	**Why did you fill in 7.3 and 9.3 differently? What does it mean?** 7.3: *Critical water safety plan, yes, one of our highest risks is water quality, so it talks to that.* *9.3 is basically similar to that. We are aware of the issues and we communicate via MuSSA or WSDP to Council as public communication. The risks are various, and they mostly refer to budget that must be allocated to emergency and planned maintenance. Also, to comply with the Green Drop. 75% to 95% percent is budget issues.*
LM1	**Let's have a look at the drinking water safety questions (7.1-7.5) How did you fill in this section?** The respondent explained the low score of the previous year for the water quality of their resources as follows: *Our reservoirs were old, but we have upgraded them and built new ones, so on this year's report I will fill in 75%.*
LM2	**Let's have a look at the drinking water safety questions (7.1-7.5) How did you fill in this section?** 7.1: *The two years were the same because we check the compliance of E. coli on a monthly basis for tests and analysis.* 7.3: *Yes, we have a Water Safety Plan. We do submit the plan.* 7.4: *We said 75% because we did not get the budget that we required.* 7.5: *We agree and 75% is what was achieved because of the available budget.*
LM3	**Let's have a look at the drinking water safety questions (7.1-7.5) How did you fill in this section?** 7.3-7.4: *We have a Water Safety Plan that is approved; we have a monitoring programme; we have an internal SANAS (South African National Accreditation System) accredited laboratory, so we strongly agreed that we have those functions in place. The only problem is our process controllers. They are classified, but we are not meeting the minimum number.* 7.3: *We will have looked at the previous year. The safety plan has gone to Council for approval; from the Risk Register we will be able to see if we have put the necessary risk-mitigating actions in place. We have done that and therefore strongly agreed.* 7.4: *There are certain problems that you cannot correct immediately. We have a problem with sulphates in the drinking water. In year 1 we will identify possible actions with their advantages and disadvantages. In subsequent years, these actions can be implemented. Therefore, in year 1, I would respond as I did on the spreadsheet.* 7.5: *I would score myself lower, because we have taken some action, but we have not yet eliminated the issue.* **Let's have a look at the wastewater and environmental safety questions (9.1-9.5) How did you fill in this section?** 9.3-9.5: *In the case of wastewater, the extent of the problem is bigger. It is a capacity issue as well as the compliance on a number of parameters. The treatment facility has problems.*

LM4	**Let's have a look at the drinking water safety questions (7.1-7.5) How did you fill in this section?** 7.2: 65% of their water is supplied and controlled by the Water Board. They only distribute it. Therefore, they selected <50%. 7.3: Certain plants have specific problems. The problems have been reported, but little to nothing has been done. The problems remain. Why is it so difficult to get problems tabled? Respondent believes there is a fear of telling it as it is, and this has led to the neglect. 7.4 and 7.5: Not enough funds to address needs. *You always find yourself short and owing in the next financial year. Other things pop up to spend money on, so we don't spend the money as intended in the budget.* **Let's have a look at the wastewater and environmental safety questions (9.1-9.5) How did you fill in this section?** 9.3-9.5: They have 100% control over the WWTP, but they are not where they want to be.
LM5	**Let's have a look at the wastewater and environmental safety questions (9.1-9.5) How did you fill in this section?** 9.1-9.5: *We have a problem with one of our wastewater plants. DWS has given us money for Phase 1; we still have to do Phase 2. Our effluent is not yet compliant. Our other plants are working well. That is why we said 50%.*
LM6	**Let's have a look at the drinking water safety questions (7.1-7.5) How did you fill in this section?** 7.3: Council is made aware of key risk issues. Why is the response 'not applicable'? *It is incorrect from my side. It should be the one next to that. Issues noted, but not tabled*. 7.5: If issues are noted, but no funds, how do you implement? *It is not that there are no funds; but the funds are not sufficient. That is where one should have had a Comments column.*
DM1	**Let's have a look at the drinking water safety questions (7.1-7.5) How did you fill in this section?** *We have made Council aware of water quality issues (7.3), the compliance reports go to Council monthly and there have been various reports on the state of our infrastructure. There has not been a detailed report on the state of everything. 7.4 should be interpreted as what funds are available to address issues. If limited funds are available; implementation (7.5) is limited.* *It is important to remember that with Water Services, the target is moving. You are never completely there. There is always something that breaks down.*
DM2	**Let's have a look at the drinking water safety questions (7.1-7.5) How did you fill in this section?** 7.2: They take samples and their process controllers are trained. But the lab is not accredited and not all the process controllers are meeting the requirements. 7.3: Only considered the Blue Drop. DWS does blind audits and there is a compliance officer. 7.4: The lab has limited budget and there are supply chain challenges. **Let's have a look at the wastewater and environmental safety questions (9.1-9.5) How did you fill in this section?** 9.3-9.5: They used the Green Drop to know where they should improve. It was not used to get budget, but Councillors showed interest in them. It was a political vehicle. For WWTPs, O&M funds are used.

5.4.8.4 Basic sanitation statement (8.5)

As probing questions, respondents were asked:

- What are your basic sanitation facilities?
- What does it mean for a municipality to ''service'' a pit latrine?
- What does the percentages in the response options refer to?
- Tell me more about your answer.
- When would one select ''not appropriate'' as an answer?

Table 25 captures the responses.

Table 25: Cognitive interviewing results for the basic sanitation statement

M1	**Basic sanitation?** *Pit latrines. The target is always moving, we are at about 75% coverage. It is impossible to reach 100% because the informal settlements are popping up all the time.* **Service?** *It is a maintenance check to see if the structure is solid; you may need a different pit structure in some areas like in the Northern areas, e.g. Diepsloot. Regularly maintained depends on usage. You can say in this area we empty every two months, however if, e.g., someone is running a crèche, it will be sooner. The other people when they see this, they will also want the service regardless. Percentage refers to number of settlements in the city as they crop up. It is the number we have provided with chemical toilets.*
M2	Response: ''more than 75% as per requirements''. Respondent noted that a response of ''more than 75% as per requirements'' could mean that there is no backlog. *As far as we know, we do not have a backlog, except in the farming areas where people are renting in backyards and sanitation is provided by the main household. Our responsibility ends with the main household. The backlog noted in the response refers to that backlog.* They provide chemical toilets, 1 per household. The toilets are emptied once a week. There is also a marshal that is appointed to look after the toilet and to report any problems with safety, maintenance, etc. All is run by a service provider.
LM2	**Basic sanitation?** *VIP systems. We do not service them. They are not the asset of the municipality. As a municipality we may not provide a bucket system. We only work with the options given.* What does the percentage mean? *We work with Stats SA (i.e. Census 2011 data). We have not done our own backlog verification. We rely on what we are given. We have limited resources to break the rules on informal settlements. We used to tap into our own funding. Now we depend on grants which we may not use as it comes with limitations.*
LM3	**What does ''servicing'' mean to you?** *In the areas where we have VIPs, we will be able to drain it with a honeysucker. We have village assistants who start and stop the boreholes and they will contact us when there are pits to be emptied.* **Environmentally friendly?** *The sanitation facility must meet some requirements. It must be within reasonable walking distance: Can you access it in a wheelchair? Is it safe? Can the excreta be contained while being used? Does it provide privacy? Can the seat be covered?*

	What is your responsibility as a municipality? *Our responsibility does not go beyond emptying, but if we provide the structure, we should make it accessible and make sure that the basic structure has facilities for handwashing. Some of them don't have. We give a small talk to the family. Whether they do it, we have no control over that.* *I cannot recall what informed the response. We have very few villages in the municipality and they are being serviced regularly. We have challenges with communal toilets.* They have biological toilets. *They are still operational, and we still empty them. And recently we have installed low-flush toilets. We dispose of faecal sludge at the treatment plant.*
LM4	**Basic sanitation?** *VIP systems*. They only empty it on request of the user and the user has to pay for it. However, they do not receive a lot of calls for draining. The percentage refers to access.
LM6	**Basic sanitation?** *We still have septic tanks. We use our own truck to service the tanks, once or twice a month. There is a schedule, but consumers can also contact us. We discharge 2km from the plant into the sewer network. Only in the farm areas there are pit latrines.*
DM1	*Basic sanitation is at least a VIP. We know that we are not servicing these facilities adequately* so the option that they've selected reflects that inadequacy. Definition of servicing: emptying. They don't have funding for emptying and their previous MM said that sanitation is a household responsibility. The Water Services managers disagreed.
DM2	**Basic sanitation?** Villages have septic tanks and pits. Towns are connected to a sewerage line. They empty pits, but they have a backlog problem. It is a problem across South Africa. *Lots of money going into water, not sanitation.*

5.4.8.5 Probing on selected other statements

Table 26 captures responses to probing questions on selected statements on the MuSSA spreadsheet.

Table 26: Other cognitive interviewing results

M1	**Most responses are highlighted in Green. A few responses are highlighted in yellow. What is the difference?** *That should be green. It should have been changed. So, most we highlight in yellow when we feel we must discuss it at the meeting with DWS. When we are not 100% sure on the question then we highlight in yellow to go back to the question. However, DWS should have had a version with only one colour, which is green. I submitted the one with green. I will have to take this up with them.* **How did you interpret 13.5?** *This is from the municipal entity's perspective. It refers to whether we are dependent on grants. We said "No" because the subsidy is equitable share; however the City does not pass it down to the entity. It is because we do not receive the grant.*
M2	**How did you interpret the statements in Attribute 14 (Asset management)?** 14.3: *The question should be based on the value of assets.* Respondents in this WSA had no idea why they got 55% on the vulnerability chart for financial asset management.

LM1	**How did you answer Attribute 1 – Water and sanitation services planning?** 50% of projects: *We have capital projects that are linked to WSDP, but if we have insufficient budget or projects are not yet completed, we will not have a 95% implementation. Some years we can do everything; other years we cannot do everything because there are priority projects.* **How did you interpret the vandalism question (C29)?** *This response will remain the same from year to year, because if you have a policy in place, it is in place*. A non-optimal response means for the respondents: *The policy is in place, but you cannot really control vandalism. Governance has filled in this question.*
LM2	**When would one select 'Not appropriate' as an answer?** *When it is not applicable to us. Coastal issues would be not appropriate. Where we have said "none" like 13.5 (grant dependency), for Finance, we are not yet there. The equitable share was taken back however we were adequate on the operational side.* *The grant is not servicing our needs as allocated; the indication there says as a municipality we are not depending on the grant, however from three years ago, we were able to tap into that funding, however now, we are managing areas that were managed by the grant however we don't receive it* (the grant).
LM3	Respondent did not have the MuSSA spreadsheet or report with him. He could not recall what he had filled in, for example, he could not remember why he was so negative about their sanitation implementation. They have a bigger budget now.
LM4	C17: The respondent understood the question: actual flow against design capacity. They operate over design capacity. He also understood that he had to answer for all WWTWs.
LM6	**1.1 and 1.2: Do you have all the planning documents in place and does the information in the planning documents feed into the IDP and the SDBIP?** They responded that some of the plans are still in development. With that they meant that the plans are there, but they have not been updated. *For example, new information from the master plans might not be reflected in the IDP or SDBIP. You are implementing from what is there; what is not there you are not implementing.* The WSDP is reviewed every five years; in the middle of the five-years, the projects will still be in the plan, even if, in a particular year, they might not be implementing all of them. **14.2 and 14.3: How did you understand the percentage?** *The finance people filled it in*. **What funding is available for projects? Why did you say zero if you are upgrading your plants?** The respondent did not know but said that it could be that the project started after they completed last year's MuSSA.
DM1	Remark regarding 1.1and 1.2: 1.2: The statements do not address the issue of completeness; the WSDP has been adopted by Council. But the WSDP is not complete or aligned with all the other planning documents. There are a number of chapters missing. **10.1-10.5: Infrastructure asset management. What is the story behind the step-down in the responses?** *The asset register is structured correctly; it has all the correct fields; from that point of view it is in place. However, there are some inaccuracies in it; it is not complete, and it is not maintained. For example, we replace pumps on an almost daily basis and that information does not get into the asset register.* Disagreement with Finance: *From our perspective, we need current replacement costs; Finance uses depreciative replacement costs. We need to know how much is needed to replace an asset that cannot be repaired. Also, there must be regular condition assessments; without those updates, the asset register is useless.*

5.4.9 GENERAL COMMENTS AND RECOMMENDATIONS

This section captures the respondents' general comments on, and their recommendations for, MuSSA.

5.4.9.1 M1

It would be great if they (DWS) say they that have noted the high vulnerabilities of our municipality and this is what they are doing to assist at national level beyond being a health check document.

5.4.9.2 M2

Notes for improvement: There is no regulatory body to assess their overall performance on water and sanitation like Treasury does with their financials.

MuSSA is a valuable tool because it looks at facets of the business, and you should be able to create your business plan out of it, but we don't. Why? *The tool needs to be mandatory; it must be a compliance issue; otherwise it will just be parked. It would be good if we could align MuSSA with our Water Safety Plan and our Water Services Development Plan. Our WSDP forms part of the IDP review process, so in that way the findings can be integrated in our planning processes.*

5.4.9.3 LM1

It is a weakness that the MuSSA spreadsheet does not ask for evidence. *You can fill in anything.* On the Ignite system that populates the SDBIP, evidence is required when you report on quarterly and annual targets. The Governance directorate sets the targets; the respondent assumes that these targets come from NT. She works on the Ignite systems for Water and Sanitation, so she can pull the information for MuSSA from there as well. She has studied Public Administration and has been working for the municipality for many years; she is therefore well versed in reporting processes. *We don't just thumb suck; we look at all these reports.*

She emphasised the reporting chain from municipality to province to national and the alignment of performance targets in this regard.

She believes that the Ignite system gives a better picture of the reality than MuSSA, especially because it is evidence-based. The web-based tool belongs to a private company. It also gives you a report. Blue means you have exceeded your target; green means you are on target; red means you have not made your target. She is not sure how the report is used.

The province uses another system, IPS2. The two systems are linked and similar; they ask the same information. They complete information on both. IPS2 sends an email to remind you and a short report that indicates outstanding percentages. She is positive about the instant feedback that you get online and looks forward to similar feedback on the MuSSA online version.

5.4.9.4 LM2

It is really about us implementing what has been highlighted. The challenge is on the implementation side on the municipality's side. But from their side (DWS), they read our information the right way and they would say please make sure that these things are part of your Risk Register. However, you will find the accounting officer not understanding the MuSSA report and findings, and that is the problem. People feel that because I am the unit head for water, this assessment is all about me when it is about all the roles that should be supporting me in putting it together. So, they don't understand their role in the value chain of providing effective service delivery.

From national side there should be emphasis on senior management. The municipality is evolving and there are new senior managers, so have a session for them on MuSSA objectives and benefits.

Realities need to be tabled at National Treasury so that they are aware of our challenges.

MuSSA has to be included as part of compliance, the accounting officer's KPIs and be tabled at Council so that everyone paints another picture. We need one document to work on.

5.4.9.5 LM3

It is good for an MM and a Council to see a high-level assessment, but there is no legal framework that would force Council to take the assessment to action. The MuSSA should be underpinned by some legal framework that makes participation compulsory for compliance.

Make MuSSA a requirement for grant funding applications.

5.4.9.6 LM4

Municipalities have to know why they are required to complete MuSSA. This will help them to better contemplate their answers and know what actions need to be taken.

The respondent feels that drastic measures are required against individuals and municipalities. *The risk with self-assessment tasks with no consequences are that people might not be truthful.*

5.4.9.7 LM5

No recommendations, apart from the previously mentioned additional questions.

The respondent believes the MM should sign-off on the correctness of the MuSSA spreadsheet.

5.4.9.8 LM6

The percentages on the spider chart only tells you what it is wrong; it does not tell you how to fix or correct it.

The respondent recommended that the report indicate what they should do. This should be written by DWS so that they can submit it to Council. *If I write such a report, Council will take it as complaining. It would carry much more weight if DWS could write such a report.*

On top of this, DWS should follow up to find out if and how we have addressed the issues highlighted in the report. Now the report just dies down.

It is also important to indicate in the report what support is available. What is the point of an action plan if you do not have the capacity to implement it? It is the same with the turnaround strategy. You must turn around, but you don't have the capacity to do so. It is like asking you to buy something that costs R100, but you only have R10.

There is a lack of vision of the business of a municipality, at Council level and at administrative level. Finance, IT, HR, they see themselves as more important than Infrastructure; they don't see themselves as supporting service delivery, which is our core function.

5.4.9.9 DM1

Reduce the number of tools and consolidate tools. Get one tool right. I don't think our municipality is mature enough to be using a tool like MuSSA.

Respondents believe that MuSSA has the potential to be useful. *There is a need to stand back from your day-to-day operations, assess yourself at a high level and plan accordingly to improve.*

Both respondents said that the Blue and Green Drops should be revived and that MuSSA should be incorporated into the planning aspects of the Drops. Respondents were not very specific in their recommendations.

The question should be asked: Who is the target audience of the MuSSA report? Is it Council, executive management, DWS, and is it structured in a way that the audience will take it seriously and act upon it?

5.4.9.10DM2
DWS should share common problems and concerns, and how to resolve it (best practices) as part of the MuSSA report.

5.5 SUMMARY OF FINDINGS

This section summarises the findings of the primary research.

5.5.1 MUSSA INSTRUMENT

Table 27: MuSSA instrument – summary of findings

Spreadsheet
- All the respondents found the spreadsheet easy to fill in.

Statements
- The statements were mostly found to be clear and comprehensive. The cognitive interviewing gives more insight into how respondents interpret the statements.
- The respondents found the statements comprehensive. LM2 and LM5 suggested additional statements. A respondent from LM2 feels that the sanitation statements are too similar.

Response options
- In general, respondents were also positive about the response categories. However, it became clear in the cognitive interviewing that respondents do not interpret them all in the same way.
- From the discussion it was clear that respondents did not fill in the spreadsheet with an exact figure in mind except for the compliance figures. Instead they would select a response category that is the closest match for their situation.

Online version
- Three out of the ten municipalities have used the online version. The respondent from LM5 commented that it is a good thing that the tool does not show the previous year's responses.
- In three municipalities, respondents were not aware of the online version.

Recommendations
- Three respondents recommended adding a notes column for providing evidence and giving context.
- Respondents agreed that the MuSSA report should feed into the IDP review, but there was no agreement on when this should be. It looks like they do their IDPs at different times during the financial year.

5.5.2 Process to complete the MuSSA spreadsheet

Table 28: Process to complete MuSSA – summary of findings

Communication

- In general, respondents were positive about the communication that they receive from DWS. In a few municipalities, the MuSSA champion receives the spreadsheet late from the MM's or a director's office and this affects their ability to return the spreadsheet on time. Respondent from LM6 said that he received the communication from the DWS regional office. The MM was copied.
- It was recommended that the communication from DWS copies the person who actually completes the MuSSA spreadsheet.
- Sometimes, the person who fills in spreadsheet only receives the spreadsheet and not the accompanying communication from DWS, so the context is not explained.

Who fills it in and how?

- Municipalities use different methods to complete the MuSSA spreadsheet.
- MuSSA is often left too close to the deadline and then they scramble after prodding from DWS.
- They have to refer to various documents to fill in the MuSSA spreadsheet accurately. The fact that the MuSSA spreadsheet does not ask for evidence probably encourages the practice of copying the previous year's responses and estimating the situation in the municipality.
- The context section is filled in by Water Services. Sometimes, Water Services completes the entire MuSSA spreadsheet like in LM4.
- In all the municipalities, the Water Services department coordinates the completion of the MuSSA spreadsheet. Several respondents commented that, because the instruction comes from DWS, it is automatically the responsibility of Water Services.
- In the LMs and DMs, Water Services is not ring-fenced so IT, HR, Customer Services and Finance are support functions for all the departments and not just for Water Services. For Water Services, MuSSA is an assessment of their business health. For IT, HR Customer Services and Finance, MuSSA only assesses the health of part of their business.

What happens after the submission?

- Responses were either vague or a direct "nothing". M1 and LM5 are exceptions.

5.5.3 Understanding of MuSSA

Table 29: Understanding of MuSSA – summary of findings

Purpose

- Some respondents said that MuSSA was a self-assessment tool that was designed to help them to identify the areas where they should improve. Others thought it was another performance assessment tool that is used to compare municipalities.
- For most respondents MuSSA is simply something they have to do every year. They do it and get on with what is more important.
- All the municipalities were unsure of how DWS uses the information.

Vulnerability vs risk

- Respondents do not understand the difference between vulnerability and risk.

5.5.4 The usefulness of MuSSA

Table 30: Usefulness of MuSSA – summary of findings

Buy-in

- In general, respondents were quite negative about the buy-in from senior management and Council.
- Lack of buy-in is cited as the main reason why MuSSA is not taken beyond submission to DWS.
- Respondents also cited other reasons for the lack of buy-in: Senior management and Council do not have to comply with MuSSA and MuSSA is not included in the KPAs of municipalities. MuSSA is perceived as the responsibility of Water Services.
- Respondents don't think that senior management and Council understand the purpose of MuSSA, and they doubt if Council knows about MuSSA.

Use of MuSSA report and spider charts

- A number of respondents have never seen the report or the spider chart.
- On the other hand, respondents did not dismiss the MuSSA tool. It gives them a valuable overview of all the aspects of the water business.
- The respondents in the LMs and the DMs were not able to translate their responses to their vulnerability scores although they know intuitively the areas where they are not performing well. Even the senior managers in M2 could not translate the responses that they gave on financial asset management to the score that they got on the spider chart.
- Respondents don't seem to know how the percentages on the spider chart are derived from their answers. They are not sure how to increase these percentages. Actions are not evident from the spider charts or the reports. This is exacerbated by the fact that, in the LMs and DMs, Water Services seem to be controlled by the support functions: finance, HR and corporate services.

MPAP

As a result of the above, only two municipalities have an MPAP. The development of the MPAP was facilitated by DWS; it was not their own initiative. In the DM, the MPAP fed into a turnaround strategy that was developed by a consultant firm, but it was never used beyond that.

Alignment with planning

- No alignment with planning processes. MuSSA ends at the diagnosis phase.
- Most of the consulted municipalities have a Risk Register and someone who is responsible for it. They are required to update their Risk Register regularly, but the Risk Register is only really used as part of the IDP review. In most, MuSSA is not aligned with the Risk Register.
- Also, if they haven't seen the MuSSA report, it will not be aligned to the Risk Register.
- Only LM6 mentioned that they flag issues that were identified in MuSSA as risks to get additional funding.

Existing processes of self-assessment and planning

- The list is extensive, and variance is high. See the details in the previous sections.
- The processes that are required by National Treasury are prioritised. Similarly, the feedback that they receive from National Treasury has the highest priority in terms of self-assessment.
- Several respondents made positive remarks about the former Blue and Green Drop as valuable tools to guide them towards better business health in water services. They could see over time how the implementation of the Blue and Green Drop requirements improved their water business.

5.5.5 COGNITIVE INTERVIEWING

Table 31: Cognitive interviewing – summary of findings

- Not all respondents used the same point of reference when they interpreted the statements. It is recommended that a point of reference is added, for example "in the previous financial year (2018/19)".
- Some respondents could not remember why they selected a specific answer. For example, the respondent from LM3 could not remember why he was so negative about their sanitation implementation.
- Respondents gave more positive answers if their responses could not be cross-checked and less positive responses on aspects that could be verified, for example, compliance, spending, implementation.
- The question: What is an organogram that meets your business requirements? (1.1 and 1.2) received a range of responses. It was interesting that the respondents were familiar with the requirements for process controllers on treatment plants and they were quick to mention that they have or do not have the required numbers and skills on their plants. But, beyond the plants, nobody seemed sure of how many positions, at what level, and associated with what skills are necessary for a specific size of municipality. Only one respondent related business requirements to the objective of service delivery.
- The response categories do not make provision for remedial action in progress, especially on drinking water and wastewater (attributes 7 and 9).
- Performance averages can be misleading, because it does not show the gravity of specific issues.
- Percentages were not interpreted in the same way. For example, a respondent would interpret the step down from issues tabled to budget provided to implementation as follows: *There is a huge budget required to address all issues, but on an annual basis, only some of the required budget will be available and hence only a percentage of issues will be addressed per year.* Other respondents interpreted the percentage implementation as implementation for a particular year, which might be on track or lagging behind.
- The discussions indicated that respondents applied the response options with percentages like a Likert scale without referring to exact percentages.
- Sanitation statement (8.5): "servicing basic sanitation" means different things to different municipalities. Most of them only take responsibility for emptying pits. Not all have the same basic facilities. Percentages refer mostly to backlogs.
- Finance statements: There were some incorrect responses, especially on grant dependency. The technical managers did not seem to know what responses would reflect good business health.

Chapter 6:
Conclusions and recommendations

6.1 General

The main thrust of both the OECD WGIF and MuSSA tools is an Action Plan, whose aim it is to improve water governance so that the institution, whether at a national or a local level, can address water challenges, and potentially achieve the results that the 2030 Sustainable Development Goals envisage.

As discussed in this report, both tools are struggling to produce workable Action Plans for different reasons. This chapter will summarise the problematic aspects of each tool that the research has identified and make some recommendations. Key recommendations are marked in blue.

6.2 The OECD Water Governance Indicator Framework

6.2.1 The conceptual framework of the WGIF

A conceptual framework is necessary to structure any discourse on good water governance, or conversations on how to improve water governance at any level or scale, be it national, basin or local government.

The framework of pillars and principles of the WGIF is both a strength and a weakness as has been pointed out in the analysis in Chapter 4. The research team found several aspects of the conceptual framework difficult to understand and we suspect that stakeholders in the pilot workshops experienced similar difficulties:

What do the three dimensions present and how are they related?

Principles are usually a set of values; yet the presentation of the water governance principles and pillars in a circle with three dimensions suggest three sub-sets and some dynamic relationship between these sub-sets. It is not evident what these three dimensions represent, how are they related, and why only one of the pillars apply to each dimension.

How does the WGIF talk to the Water Governance Cycle?

Although the WGIF is mapped onto the Water Governance Cycle, it is not evident from the literature how it is aligned to the Water Governance Cycle, which in turn, is aligned to the business improvement cycle. In other words, where in the business cycle do these pillars and principles apply, or do they apply across all aspects of the business cycle?

Where are the results in the depictions of pillars and principles and the Water Governance Cycle?

As was mentioned in Chapter 4, business excellence models focus strongly on results as results tend to trigger the drive towards change and improvement. It is also likely that the starting point in any stakeholder discourse on water governance will be specific current water challenges, i.e. ‘’results’’.

Stakeholders will also want to link the Action Plan to results, i.e. to address these water challenges. It is likely that the disappointing outcome of the OECD WGIF pilots in Africa was affected by the inability of stakeholders to make this link.

In the Water Governance Cycle, Monitoring and Evaluation aim to assess and bridge gaps. Gaps in processes or results, or both? And what are the anticipated results? Although the literature states that the principles are not specific to any water function, use or ownership (OECD, 2015:8), or results in terms of these, we believe that showing the link to results in the OECD figures will enhance the stakeholder discourse.

Figure 17 is an attempt to align the WGIF pillars and principles closer with the Water Governance Cycle and to also include results the Water Governance Cycle.

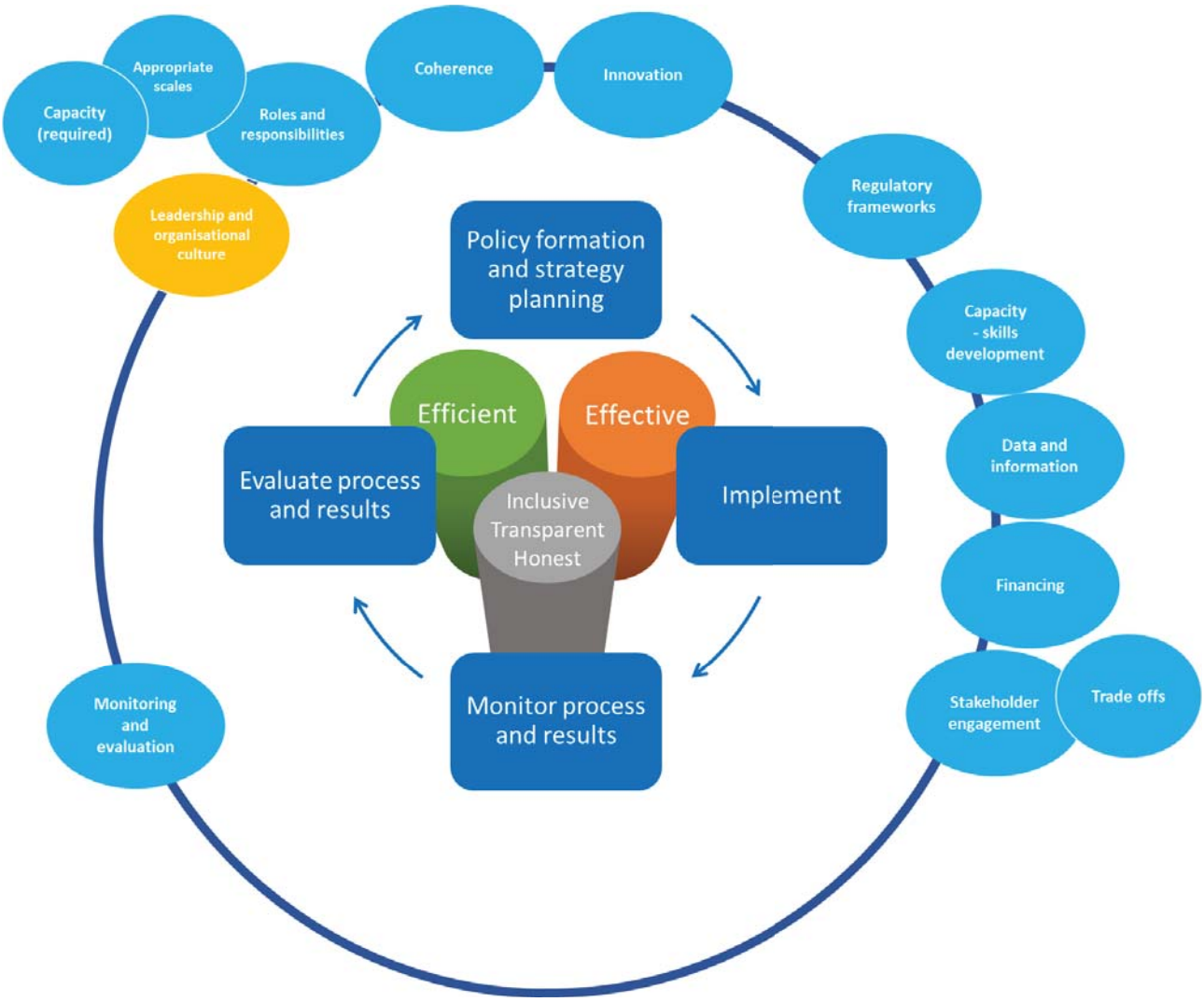


Figure 17: WGIF Pillars and Principles closer aligned to the Water Governance Cycle

The main features of the figure are the following:

1. The three pillars apply to the full Water Governance Cycle and to all principles.
2. "Process and results'' have been added to Monitor and Evaluate in the Water Governance Cycle.
3. The OECD WGIF principles are depicted in light blue circles. It is posed that some principles apply more 'naturally' to ''Policy formation and strategy planning'' in the Water Governance

Cycle and others apply more 'naturally' to ''Implementation''. The Capacity principle has been applied to in both ''Policy formation and strategy planning'' and ''Implementation''.

4. Based on the descriptions of the principles in the literature (Akhmouch et al., 2017), some of the principles have been grouped:
    a. Capacity and Appropriate scales have been grouped with Roles and Responsibilities.
    b. Trade-offs has been grouped with Stakeholder engagement.
5. "Leadership and organisational culture'' was added as a proposed new principle. This is based on the prominence of this value in business excellence models. The pillars would be the basis of the organisational culture, but the detail would have to be decided at a strategic level, such as degree of responsibility, communication patterns and opportunity for initiative.

6.2.2 STANDARDS FOR IMPLEMENTATION

As has been mentioned in the analysis in Chapter 3, the WGIF sets the ideal for values and principles. It also sets the basic requirements for the application of each principle.

The MuSSA research has shown that implementers need clear standards for each operational area: a) against which they can assess themselves and b) which they can use as a step-by-step guide to take the current results to an improved level. Such standards are implicit in the "Regulatory frameworks" principle, but it is recommended that they are made explicit for the development of an action plan. It cannot be assumed that participants engaging with the WGIF know or understand the standards or the steps needed to take them from their current level to an improved level.

6.2.3 THE INDICATORS AND RESPONSE CATEGORIES

As has been pointed out in Chapters 3 and 4, the success of the stakeholder workshops relies on the ability of the participants to engage meaningfully with the WGIF.

The consistent structure of the indicators is a strength of the WGIF. Unfortunately, the indicators are phrased in highly complex English and an abundance of technical terms, which most stakeholders will find very difficult to understand as the readability analyses showed. This is confirmed by the feedback of participants from the African pilots.

It is therefore recommended that the indicator statements be drastically simplified and phrased as questions. (Appendix 6 shows how the indicator statements could be phrased as high-level questions). It is also recommended that the response categories be revisited as discussed in Chapter 4, 0.

Chapter 4 explains the value of cognitive interviewing to improve stakeholder engagement, and consequently data integrity. **It is recommended that the OECD applies this methodology to test and improve the clarity of the Indicators and the response categories.**

The WGIF indicators are very high level and for a more meaningful discourse, they will probably need to be translated for the level of governance and the particular water function (such as water services) where they are applied.

The MuSSA tool, for example, talks the language of local government and respondents could relate to the names of policy and planning documents. In this regard, MuSSA could be an example for the OECD WGIF of an assessment tool that speaks the language of the governance level (scale) and the water function at which it is pitched.

6.2.4 THE STAKEHOLDER CONSULTATION PROCESS

Several aspects of the OECD WGIF's stakeholder process could be useful for stakeholder engagement at local government level, in South Africa and elsewhere.

The OECD WGIF includes a detailed process for stakeholder engagement, which could, for example, be applied to the South African annual IDP stakeholder consultation process.

The OECD WGIF broadens the responsibility of water management to include the private sector and civil society as stakeholders in the consultation process. This could be particularly relevant for weak performing municipalities.

We recommend that these points be added to the agenda of the planned dialogue between the OECD and South African local government.

6.3 THE MUSSA TOOL

The recommendations outlined in this section are based on the literature review and the primary research, which included municipal officials' own recommendations regarding the way forward for MuSSA.

6.3.1 THE POSITIONING OF MUSSA IN DWS

MuSSA is currently the only performance monitoring tool that gives DWS and stakeholders such as National Treasury and CoGTA comparative data on the business health of all aspects of municipal water services. Such data is critical to monitor and evaluate the implementation of the Water & Sanitation Master Plan. The primary research indicated that MuSSA has the potential to drive business health in WSAs.

It is recommended therefore that an appropriate MuSSA champion in DWS is identified who has the mandate to implement it and align it with the Water & Sanitation Master Plan.

6.3.2 THE POSITIONING OF MUSSA IN MUNICIPALITIES

MuSSA was developed to enable WSAs to assess their own business health and to put actions in place to address their challenges and improve water services delivery. The primary research found that MuSSA is unfortunately a low priority in municipalities. This raised the question in the Reference Group as to whether MuSSA should remain a voluntary self-assessment or whether it should become a regulatory requirement.

The primary research found the reason for the low priority of MuSSA to be twofold:

1. Respondents all recognise the potential value of MuSSA, but the majority do not know how to unlock this value. See recommendations 3.3 to 3.6 below.

2. There seems to an overload of assessment instruments and planning tools in the local government space.

   Respondents emphasised that unless MuSSA feeds into one of Council's processes it will continue to fall by the wayside in terms of priority and use. The annual IDP review takes place in all municipalities and it is therefore the most appropriate Council process for MuSSA to feed into. In addition, some respondents said that MuSSA must be part of executive management's KPIs.

   However, in LMs and DMs, it seems that Water Services has little control over their budget and even the filling of positions. Feeding MuSSA into the IDP process will not change this.

6.3.3 Conceptual framework

MuSSA is described in DWS (2019) as a self-assessment tool for WSAs to establish their overall business health. In this sense, it is a typical business health check. However, the conceptual framework underlying the tool is not described in the MuSSA guideline (DWS, 2019).

The 2019 version of the EFQM Business Excellence Model works well as an underlying conceptual framework for MuSSA, because it is underpinned by the business improvement cycle. Figure 18 illustrates how this version of the EFQM Business Excellence Model could work as a conceptual framework for the MuSSA Business Health Attributes:

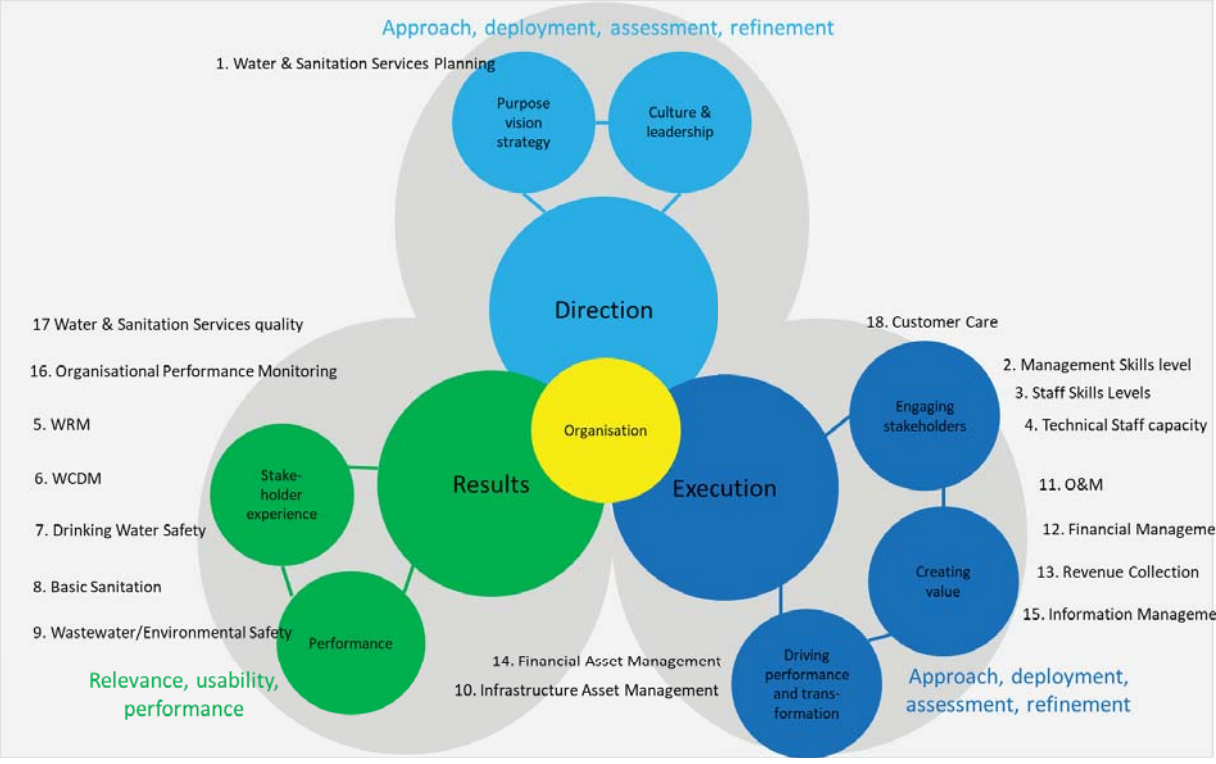


Figure 18: MuSSA Business Health Attributes mapped onto the EFQM business excellence model (2019 version)

The mapping clearly shows how the MuSSA attributes are clustered around Execution and Results. Direction is incorporated in the statements under some of the attributes.

The absence of an equivalent to the organisational culture and leadership criteria that feature so strongly in all business excellence model is conspicuous and should be addressed.

6.3.4 Verification

Several respondents in the primary research recommended that verification should be a requirement of MuSSA. In the current context, verification would add another administrative which would make officials even more reluctant to complete the MuSSA spreadsheet.

The following is therefore recommended:

- **WSAs should be required to verify their performance on a once off, annual basis. Multiple verification requests only result in frustration and non-compliance. The WSAs' financial statements are already audited. If the Drops return, data on drinking water, wastewater and environmental safety, and water losses will be audited. No additional verification will then be needed for MuSSA for these aspects.**
- **As a verification mechanism, DWS could consider random spot audits of the full spectrum of WSAs' water business every 2-3 years.**

6.3.5 The statements and response categories

Respondents found the context section long and the relationship between these statements with the Business Health Attributes is not evident. It is recommended that this section be revisited and integrated into the attributes.

Several respondents recommended that a notes column be added where they can provide the context for their answers

The cognitive interviewing found that, for some statements not all respondents or municipalities:

- Have the same understanding of the statement; and
- Interpret the response options in the same way.

As this has a negative impact on data integrity, we recommend that those statements and response categories that give problems be simplified and re-tested.

Below are two examples of how statements and response categories could be simplified. The simplifications are based on the responses that municipal officials gave in the interviews:

Original

Statement

You are servicing your basic sanitation facilities (e.g. pit latrines) as per safe sanitation requirements (healthy, environmentally safe, structurally sound, regularly maintained, following faecal sludge management best practices)

Response categories

a. Yes, 100% as per requirements
b. Strongly agree (i.e. >95% as per requirements)
c. Mostly agree (i.e. >75% as per requirements)
d. Agree somewhat (i.e. >50% as per requirements)
e. No, we only manage to service <50% of the sanitation infrastructure
f. No, we have serious shortfalls in the servicing of sanitation infrastructure (i.e. <20 %)
g. Don't know
h. Not applicable

Revised

Statement

You empty full VIP toilets and other pit latrines:

Response categories

a. Regularly, according to a rotation schedule
b. On request
c. Never. It is the residents' own responsibility to empty full pits.
d. Don't know
e. Not applicable. We do not have VIP toilets or other pit latrines in our municipality.

Original

Statement:
Your appropriate water and sanitation services planning (e.g. WSDP) and associated master planning processes include and are aligned with appropriate Water and Sewage Master Plans, Spatial Development Framework (SDF), Water Safety Plans and Wastewater Risk Abatement Plans (W2RAPs), and are aligned to your IDP and associated SDBIP targets.

Response categories

a. Yes, appropriate water services plans are developed and include all required plans and alignment (i.e. 100%)
b. Yes, appropriate water services plans are developed and include all required plans and alignment (i.e. > 95%)
c. Yes, appropriate water services plans are developed and include all required plans and alignment (i.e. > 75%
d. Yes, appropriate water services plans are developed and include all required plans and alignment (i.e. > 50%)
e. Plans still in development
f. Plan development not yet initiated
g. Don't know

Revised

Statement
Your WSDP:

1. has been adopted by Council
2. is aligned to your IDP and associated SDBIP targets.
3. is annually updated and aligned with a Water and Sewage Master Plan, Spatial Development Framework (SDF), a Water Safety Plan and a Wastewater Risk Abatement Plan (W_2RAPs)
4. is implemented

Response categories

a. All four (1, 2, 3 and 4)
b. Three of the four (Indicate which three, for example 1, 2 and 3)
c. Two of the four (Indicate which two, for example 1 and 2)
d. One of the four (Indicate which one)
e. None of the four. The WSDP is still being developed
f. Don't know

6.3.6 The MuSSA process

Municipalities follow different processes to complete the annual MuSSA spreadsheet. The process that is followed and the people who complete the spreadsheet are an indication of the priority that MuSSA has in the municipality, as was discussed in the previous chapter.

The online version is welcomed, and respondents agreed that it would speed up the process.

Several commented that the data quality will improve if the tool does not show the answers from the previous years. It was also recommended that DWS copy the person who uploaded the MuSSA the previous year in the MuSSA communication. This will help to ensure that the MuSSA champion in each municipality receives the DWS communication and in time.

6.3.7 THE MUSSA REPORT

The research found that the MuSSA report format could be improved.

Not one respondent understood the difference between vulnerability and risk correctly. Also, because vulnerability is depicted in risk colours, respondents perceived the spider chart as a reflection of risk.

It is recommended that MuSSA scraps the use of the term ''vulnerability'' and only use the term ''health of your water business''.

Furthermore, it was not evident for municipal officials how they should address the vulnerabilities that the MuSSA report highlights. Officials need clear and comprehensive goals for each business area in order to meaningfully discuss and assess where they are currently falling short.

It is therefore recommended that the MuSSA report format be expanded so that municipalities can clearly see the link between their performance, business excellence and the actions that are needed to improve. Table 32 is a suggested report outline.

Table 32: Suggested report outline for MuSSA

Headings (based on 2019 EFQM)	Sub-heading	Indicate status for each
Policy formation and strategy planning	Are the regulated policy and planning documents in place and approved by Council?	IDP, WSDP, Water Safety Plan, Wastewater Risk Abatement Plan, IT Master Systems Plan, Disaster Management Plan, Risk Register, Asset Management Plan, O&M Plan, etc.
Implementation	Are these documents updated and implemented?	Same as above
	Do we have the necessary and required skills?	Appropriate organogram Managerial skills Technical skills
	Are there adequate finances budgeted and approved by Council?	For each functional area
	Do we have the required databases and information	For each functional area
Results	Are we meeting our targets and planning goals?	For each functional area

MuSSA is just one of the many performance assessment tools that municipal officials are tasked to complete. Based on what they filled in, they get an array of reports from National Treasury, CoGTA and DWS.

There is a need to consolidate these reports so that municipalities receive a single report on their business health that is easy to understand and actionable. The visual elements of such a report could be displayed on a web page similar to Municipal Money.

6.4 COMPLEMENTING PERSPECTIVES

The OECD WGIF and MuSSA share the thrust of an Action Plan, but they differ in their approach and focus. The OECD WGIF is generic for all scales and all water functions; the MuSSA is specific to local government and water services.

The two Venn diagrams in Figure 19 below illustrate the difference in focus – orange for the OECD WGIF and green for MuSSA; the white areas show the limitations of each tool that the analysis has pointed out. In conjunction, the two diagrams illustrate how the two tools could complement each other in the way forward.

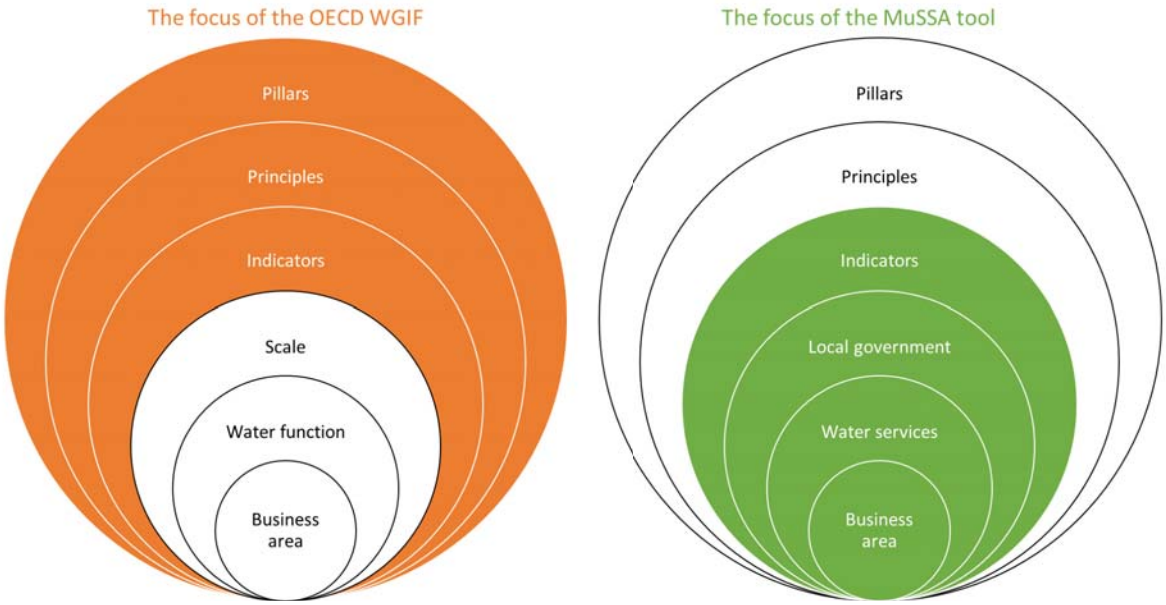


Figure 19: Difference in focus

6.5 THE WAY FORWARD

The research has shown how important it is that self-improvement tools reflect the challenges and practical needs of the stakeholders involved at the scale where it is applied. The development of such tools cannot only be a theoretical exercise. It is necessary to regularly review and refine these tools so that they remain in touch with the reality that they aim to influence.

For the OECD WGIF, action research to refine the tool is proposed. This would entail an experimental pilot where stakeholders at a specific scale and for a specific water function, with the facilitation of OECD officials, apply, interrogate and improve the tool (or selected sections of the tool) in two to three rounds. For each round, we propose different stakeholders, with the same profile.

For MuSSA, a dialogue between sector partners to re-assess how MuSSA can best add value to improving water and sanitation service delivery in WSAs is proposed. Discussion points could include:

- Potential improvements to the MuSSA tool (explicit conceptual framework; clear standards for each business area; clear and unambiguous assessment statements and response categories; a more comprehensive reporting format)

- Recommendations emerging from this study for institutionalising MuSSA both within DWS and the WSAs
- Putting WSA performance in each of the water business areas in the public space to leverage support from government, the private sector, community organisations, NGOs or donor organisations, even from capable individuals living in the municipal area.
- The need to consolidate performance assessment and planning in local water governance.

Lastly, the methodology of this study could be useful to review self-improvement mechanisms in other government departments, like the LGMIM tool of the Department of Planning, Monitoring and Evaluation.

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Appendices

1 OECD WATER GOVERNANCE INDICATORS AND CHECKLIST

1.1 PRINCIPLE 1: CLEAR ROLES AND RESPONSIBILITIES

1.1.1 Indicators

a. **Existence and level of implementation of a water law**
   This indicator seeks to appraise the existence and level of implementation of a water law, which can be at national level or subnational level depending on the institutional feature of the country (unitary or federal). The law should clearly assign and distinguish water-related roles and responsibilities for policy making (especially priority setting and strategic planning).
b. **Existence and functioning of ministry, line ministry, central agency with core water-related responsibilities for policy making**
   This indicator seeks to appraise the existence and functioning of institutions in charge of setting water-related policy goals and strategies and delivering them; these can be at national or subnational level depending on the scale of the self-assessment and the institutional feature of the country (unitary, federal).
c. **Existence and implementation of mechanisms to review roles and responsibilities, to diagnose gaps and adjust when need be**
   This indicator seeks to appraise the existence and level of implementation of mechanisms that can help identify areas of water management where there is no clarity on who does what; areas with incoherent and/or contradictory objectives; areas with deficient implementation and/or limited enforcement; and/or areas with overlaps/duplication of responsibilities. They can take the form of analytical reports, regulatory impact assessments or regulatory reviews; open stakeholder consultations.

1.1.2 Checklist

- Is there a dedicated water policy, indicating goals, duties, resources needed?

  Such a policy can be at national or subnational level depending on the scale at which the assessment is carried out and the constitutional organisation of the country.

- Have applicable binding and non-binding water-related international or supranational frameworks and regulations been transposed at national (or subnational) level(s)?
- Are there horizontal co-ordination mechanisms across subnational authorities to manage interdependencies for water policy design and implementation?

  Examples include inter-municipal or metropolitan collaboration as well as fiscal, financial or other incentives from central/regional governments, specific mechanisms for conflict resolution, joint financing, metropolitan or regional water districts, or informal co-operation around projects.

- Are there vertical co-ordination mechanisms or incentives that foster policy alignment, complementarities and co-operation across central and subnational governments?

Examples include contractual arrangements across levels of government; intermediate bodies or actors with core water responsibility; sectoral conferences between central and subnational water players; co-ordination agencies or commissions; shared databases and information systems; financial transfers or incentives; and organisations/tools facilitating the dialogue across levels of government.

1.2 Principle 2: Appropriate scales within basin systems

1.2.1 Indicators

b. Existence and level of implementation of integrated water resources management policies and strategies

This indicator seeks to appraise the existence and level of implementation of integrated policies and strategies from sub-basin to upper levels to capture and distribute freshwater and to release wastewater and return flows, with a circular economy perspective; to manage water from sources to sea; and to foster conjunctive use and management of surface, groundwater and coastal water(s).

c. Existence and functioning of institutions managing water at the hydrographic scale

This indicator seeks to appraise the existence of a basin approach to water management following hydrographic boundaries rather than (only) administrative frontiers. Depending on countries' institutional organisations, such institutions can be decentralised or deconcentrated bodies, catchment-based or catchment-oriented. Besides their existence, the indicator should also appraise the extent to which they carry out their functions related to monitoring, collecting water revenues, co-ordination, regulation, data collection, pollution prevention, issuing water abstraction permits and effluent discharges licences, allocation of uses, planning, assets maintenance and operation, capacity development, public awareness, conflict resolution, and stakeholder engagement. Their activities should be based on basin management plans consistent with national policies and local conditions, defined according to international best practices (for EU member countries, the provisions of the Water Framework Directive could be used as screening criteria).

d. Existence and level of implementation of co-operation mechanisms for the management of water resources across water-related users and levels of government from local to basin, regional, national and upper scales

This indicator seeks to appraise the existence and level of implementation of mechanisms to foster co-operation across users, stakeholders and levels of government for the management of water resource. Examples of such mechanisms could include shared data and information system, joint programmes of measure, joint projects or contracts, co-financing, or forms of multi-level dialogue.

1.2.2 Checklist

- Where they exist, do catchment-based organisations have the adequate level of autonomy, staff and budget to carry out their functions?
- Are there policy and economic instruments in place to manage too much, too little and too polluted water at hydrographic scale?

  Examples include river basin plans, water charges, water entitlements, early warning systems for disasters, dedicated water resources funds, models and decision support system, information system, research, development and innovation, inspections, etc.

- In case of transboundary rivers, lakes or aquifers, are there mechanisms or incentives to co-ordinate among riparian states?

  Examples include dedicated commissions, joint basin plans, joint information and/or monitoring systems, mutual assistance programmes, joint research and innovation, early warning and alarm procedures, public participation fora, joint financing and/or cost recovery, dispute resolution mechanisms.

- Are there co-ordination mechanisms to combine territorial and hydrographic scales for water resources management, for instance in metropolitan areas?

  Examples include multi-sectoral metropolitan bodies, multi-sectoral or bundled utilities for water and related services, rural-urban partnerships, rivers or aquifer contracts, among others.

1.3 PRINCIPLE 3: POLICY COHERENCE

1.3.1 Indicators

a. Existence and level of implementation of cross-sectoral policies and strategies promoting policy coherence between water and key related areas, in particular environment, health, energy, agriculture, land use and spatial planning
This indicator seeks to appraise the existence and the level of implementation of integrated policies, strategies, fostering coherence across sectors, while minimising contradictory objectives and negative impacts.

b. Existence and functioning of an inter-ministerial body or institutions for horizontal co-ordination across water-related policies
This indicator seeks to appraise the existence and functioning of bodies or institutions to facilitate coherent policies across ministries, discussing synergies and managing trade-offs across water, environment, health, energy, agriculture, industry, spatial planning and land use and other relevant areas.

c. Existence and level of implementation of mechanisms to review barriers to policy coherence and/or areas where water and related practices, policies or regulations are misaligned
This indicator seeks to appraise the existence and level of implementation of mechanisms to identify barriers that hinder the coherent management of water and key related domains. These could include outdated legislation, distortive subsidies, conflicting interests, competition between ministries, overlapping roles and responsibilities, lack of integrated planning, split incentives or poor enforcement. Examples of such mechanisms include (multi-)sectoral reviews, regulatory impact assessment, inter-ministerial platforms or integrated legislation, among others.

1.3.2 Checklist

- Is there a dedicated policy or high-level political support to water management as a driver to economic growth as featured by the Sustainable Development Goals?
- Are data and projections on water demanded from agriculture, industry (including energy) and households available and guiding decisions about handling competing uses now and in the future?
- Is there an assessment of the distributional impacts on water management of decisions taken in other areas such as energy subsidies, spatial development, agriculture or environment?
- Are costs due to absent/poor water-related policy coherence evaluated and available to decision makers?

Such costs could be economic, social, environmental or financial, or relate to greater risks of human causalities, among others.

- Are benefits from policy coherence and policy complementarities evaluated and showcased to decision makers and key stakeholders?

  Examples could include reduced information asymmetries, optimisation of financial resources use, reduction/elimination of split incentives/conflicts, equity across users, better disaster preparedness, etc.

- Are there provisions, frameworks or instruments to ensure that decisions taken in other sectors are water-wise?

  An example would be the water tests whereby any spatial development projects need to feature water-related constraints.

- Are there horizontal co-ordination mechanisms at subnational and national levels?

  Examples include: cross-sectoral groups/meetings, cross-sectoral policy reviews, financial incentives/conditionalities, joint actions of ministries/agencies at subnational level, cross-sectoral research programmes, etc.

- Are there conflict mitigation and resolution mechanisms to manage trade-offs across water-related policy areas?

  Examples include top-down or command-and-control mechanisms (water courts, laws, regulations) and bottom-up initiatives (public consultation, stakeholder groups facilitating collaborative solutions, users' associations).

1.4 Principle 4: Capacity

1.4.1 Indicators

a. Existence and level of implementation of hiring policies, based on a merit-based and transparent professional and recruitment process of water professionals independent from political cycles

This indicator seeks to appraise the framework conditions (not necessarily water-specific) in place and their level of implementation to assure the presence of competent staff able to deal with technical and non-technical water-related issues across agencies, responsible ministries and water management bodies.

b. Existence and functioning of mechanisms to identify and address capacity gaps in water institutions

This indicator seeks to appraise the existence and functioning of mechanisms to identify the level of capacity of responsible authorities in carrying out their duties and coping with water challenges. Duties are: planning, rule-making, project management, finance, budgeting, data collection and monitoring, risk management and evaluation.

c. Existence and level of implementation of educational and training programmes for water professionals

This indicator seeks to appraise the existence and level of implementation of capacity-related programmes (e.g. educational curricula, executive training, technical assistance, etc.) to strengthen the capacity of water institutions as well as stakeholders at large in critical areas such as planning, financing and monitoring.

1.4.2 Checklist

- Are there incentives to create water careers in the public sector?
- Are there guidelines or standards for capacity building across authorities at all levels?
- Are there peer-to-peer dialogue platforms across river basin organisations?
- Are there networks of utilities and networks of basin organisations at national level?
- Are institutional strengthening and soft capacity included into technical assistance programmes?
- Are there decentralised co-operation mechanisms to foster north-south, south-south and north-north experience learning, capacity building and knowledge transfer?

1.5 PRINCIPLE 5: DATA AND INFORMATION

1.5.1 Indicators

a. Existence and functioning of updated, timely shared, consistent and comparable water information systems

This indicator seeks to appraise the existence and functioning of water information systems that can guide decisions and policies related to water. Data could encompass, for instance, the status of water resources, water financing, environmental needs, socio-economic features and institutional mapping.

b. Existence and functioning of public institutions, organisations and agencies in charge of producing, co-ordinating and disclosing standardised, harmonised and official water-related statistics

This indicator seeks to appraise the existence and functioning of institutions producing independent data and official water-related statistics at national or subnational level. Selected criteria include whether they are endowed with sufficient resources, if they produce information that is reliable, credible and free from political intervention.

c. Existence and level of implementation of mechanisms to identify and review data gaps, overlaps and unnecessary overload

This indicator seeks to appraise the existence and level of implementation of mechanisms to review data collection, use, sharing and dissemination to identify overlaps and synergies and to track unnecessary data overload. They can take the form of reviews, reports, open consultations, among others.

1.5.2 Checklist

- Are the following data on water and sanitation services available?
  - service coverage
  - cost of water services (transporting and supplying water; collecting and treating wastewater; identification of records relating to personnel and equipment)
  - cost recovery and prices in relation to consumer income and purchasing power
  - knowledge of assets, maintenance of infrastructure programmes to ensure sustainable operation, maintenance and renewal
  - drinking water and wastewater quality controls against specified standards.
- Are key data on water services publicly available and communicated to customers?
- Is the water supply and sanitation information system harmonised, integrated, standardised and co-ordinated across relevant agencies and responsible authorities across relevant governance scales?
- Are the following data on integrated water resources management available?
  - qualitative and quantitative state of resources including hydrogeological data

- user registry and entitlement permits for water withdrawal
- withdrawals and consumption by sectors (domestic, energy, agriculture, industry)
- pollution sources, registry, permits and measurement of quality parameters of pollution emission
- hydrological connection between surface water and groundwater resources
- water charges collected and subsidies given and their expenditure.

- Are key data on water resources management publicly available and communicated to users?
- Is the integrated water resources management water information system harmonised, integrated, standardised and co-ordinated across relevant agencies and responsible authorities across relevant governance scales?
- Are the following data on risk management available?
  - projections/scenarios with reference to climate change and exposed lives and goods, risks of floods, drought and accidental pollution
  - meteorological data, including data on rainfall
  - data on water flows and pressures and extension of flooded areas for known events
  - historical data on water disasters
  - data on vulnerability (human beings and properties)/ exposure to risk.
- Are key data on water risk management publicly available and communicated to citizens?
- Is the risk management water information system harmonised, integrated, standardised and co-ordinated across relevant agencies and responsible authorities across relevant governance scales?
- Are there real-time data and do they guide decision making?
- Are there bottom-up mechanisms to produce and disclose water-related data and information in a shared responsibility across levels of government, public, private and non-profit stakeholders?
- Are there platforms for dialogue between data producers and users?
- Are there incentives or forms of co-operation between primary and other data producers?
- Do online platforms/tools/agreements exist for experience and knowledge sharing?
- Do incentives exist to produce, disclose and use water-related data and information, through innovative ways?

  Examples are big/smart/mobile data, digital maps, real-time sensors and monitoring.

1.6 Principle 6: Financing

1.6.1 Indicators

a. Existence and level of implementation of governance arrangements that help water institutions collect the necessary revenues to meet their mandates and drive water-sustainable and efficient behaviours

This indicator seeks to appraise the existence and level of implementation of governance arrangements that help water institutions collect the necessary revenues to meet their mandates, based on key principles such as the polluter-pays, user-pays and the interest-pay-say, as well as payment for environmental services.

b. Existence and functioning of dedicated institutions in charge of collecting water revenues and allocating them at the appropriate scale

This indicator seeks to appraise the extent to which water management institutions (e.g. utilities, regulators, basin organisations) exist and are in charge of collecting water revenues (taxes and tariffs) and allocating them in a transparent, efficient and timely manner.

c. **Existence and level of implementation of mechanisms to assess short-, medium-, and long-term investment and operational needs and ensure the availability and sustainability of such finance**

This indicator seeks to appraise the existence and level of implementation of mechanisms to identify investment needs and funding gaps in terms of physical infrastructure and governance functions to manage too much, too little, too polluted waters and to sustain/achieve universal coverage of water services. Examples include ex ante and ex post evaluation (e.g. related to the use of economic instruments), sectoral reviews, economic and affordability studies (e.g. to assess users' capacity or willingness to pay), forecasts and projections, and multi-annual budgeting or planning.

1.6.2 Checklist

- Are there enough financial revenues (taxes, tariffs, transfers) to cover operational costs and long-term assets renewal to protect ecosystems services and to finance biodiversity programmes?
- Is there standardised/harmonised guidance at national or subnational level for setting and governing economic instruments such as tariffs, abstraction or pollution charges, groundwater tax?
- Are abstraction charges in place to foster water-use efficiency and collect revenues?
- Are pollution charges in place to foster water quality management and collect revenues?
- Are there schemes or incentives for payment for environmental services?
- Do flexible and solidarity mechanisms exist in case of water-related disasters?
- Are there multi-annual strategic plans to review short-, medium- and long-term investment needs and support policy continuity?
- Are there investment plans and programmes and do they guide decision making?
- Are there clear budget transparency principles and rules applied at all levels of government?
- Are there measures to minimise unnecessary administrative burdens when collecting and disbursing water-related revenues?
- Are there reporting mechanisms and audits of financial administration for water-related expenditure?
- Are there mechanisms or incentives to foster the efficient and transparent allocation of water-related revenues?

  Examples include: social contracts, scorecards, cost-benefit analyses.

1.7 Principle 7: Regulatory frameworks

1.7.1 Indicators

a. **Existence and level of implementation of a sound water management regulatory framework to foster enforcement and compliance, achieve regulatory objectives in a cost-effective way, and protect the public interest**

This indicator seeks to appraise the existence and level of implementation of regulatory frameworks to foster enforcement and compliance, achieve regulatory objectives in a cost-effective way, and protect the public interest. The functioning should take into account their clarity, comprehensiveness, coherence and predictability.

b. **Existence and functioning of dedicated public institutions responsible for ensuring key regulatory functions for water services and resources management**

This indicator seeks to appraise the extent to which: 1) key regulatory functions are entrusted to and carried out by responsible authorities, in particular tariff setting and affordability; standard setting; licensing, monitoring and supervision; control and audit; conflict management; 2) how such institutions perform in carrying out their responsibilities. The indicator deliberately encompasses the entire water cycle (services and resources) and may require trade-offs when building consensus across stakeholders as some institutions may perform better than others depending on the water management function.

c. **Existence and level of implementation of regulatory tools to foster the quality of regulatory processes for water management at all levels**
This indicator seeks to appraise the existence and level of implementation of regulatory tools – such as evaluation and consultation mechanisms – to ensure that rules, institutions and processes are fit-for-purpose, well-coordinated, cost-effective, transparent, non-discriminatory, participative, easy to understand and to enforce.

1.7.2 Checklist

- Is there a systematic requirement to consider existing international standards and norms in the development and revision of national and/or subnational legal frameworks?
- Are there a dedicated regulatory agency(ies)/bodies or capacities (e.g. within a ministry) in charge of enforcement and
- compliance for water resources, water services and disaster risk management?
- When they exist are regulatory agencies subject to by laws or internal regulations that clearly state their mandate and powers?
- Are relevant regulatory and inspection authorities embedded with resources in line with their mandate? In case of dedicated regulatory agency(ies), are they financially independent?
- Do regulatory authorities take decisions that can also be legally binding?
- Are evaluation mechanisms in place to systematically and regularly performance/effectiveness, gaps and overlaps in the regulatory framework?

  For instance, areas with regulatory vacuum/gaps, incoherent and/or contradictory objectives, deficient implementation and/or limited enforcement, overlaps/duplication of responsibilities, lack of consistency and continuity of regulation, etc.

- Are water-related legislations subject to regulatory impact assessment?
- Are there reviews of the governance and performance of regulatory and inspection agencies or bodies?
- Are there water-specific inspectors (e.g. a water “police”) or other specific enforcement tools in place?
- Are there co-ordination instruments between water relevant ministries and bodies?
- Are there requirements to disclose information and inputs used for regulatory decisions?
- Can regulatory decisions taken be repealed?
- Are there mechanisms to solve water-related disputes (be they water-specific or not)?
- Where self-regulation mechanisms exist, are they object of regular performance assessment?

1.8 PRINCIPLE 8: INNOVATIVE GOVERNANCE

1.8.1 Indicators

a. **Existence and level of implementation of policy frameworks and incentives fostering innovation in water management practices and processes**

This indicator seeks to appraise the existence and level of implementation of policy and regulatory incentives that foster water-related innovation in terms of products, institutional and contractual design, and governance processes. Examples include frameworks that can incentivise experimentation or pilots to draw lessons and share experience prior to generalising a given reform or process at a larger scale; incentives for innovative financing; incentives for the use of alternative water sources, etc.

b. **Existence and functioning of institutions encouraging bottom-up initiatives, dialogue and social learning as well as experimentation in water management at different levels**
This indicator seeks to appraise the existence and functioning of institutions encouraging water governance innovation and responding to new needs for water governance practices. They could be in charge of promoting innovative ways to co-operate across government and stakeholders, pool resources and upscale water governance innovation.

c. **Existence and level of implementation of knowledge and experience-sharing mechanisms to bridge the divide between science, policy and practice**
This indicator seeks to appraise the existence and level of implementation of knowledge- and experience-sharing instruments to foster the science-policy interface, such as multi-stakeholder co-creation processes and tools supporting decision-making processes based on scientific evidence, communicated for example through interactive maps, simulation models, etc.

1.8.2 Checklist

- Are there any public bodies or accredited bodies fostering innovation (financing, sharing feedback, assessing, incentivising)?
- Do innovative tools and processes exist to:
  - build capacities
  - raise awareness
  - engage stakeholders
  - share information
  - engage within and across organisations?
- Are information and communication technologies used to guide better public action in water management and how?
- Are there reviews to evaluate the state of play of and potential for technical and non-technical innovation, costs/benefits of innovation, as well as regulations and standards hindering innovation?
- Do platforms exist to draw lessons from failures in water policy and governance, and to catalyse and scale-up best practices and success stories?
- Are there innovative co-operation mechanisms across territories and water users?

  Examples include metropolitan governance, inter-municipal collaboration, urban-rural partnerships, performance-based contracts.

1.9 PRINCIPLE 9: INTEGRITY AND TRANSPARENCY

1.9.1 Indicators

a. **Existence and level of implementation of legal and institutional frameworks (not necessarily water-specific) on integrity and transparency which also apply to water management at large**
This indicator seeks to appraise the existence and level of implementation of legal and institutional frameworks that hold decision makers and stakeholders accountable (e.g. public procurement), and whereby the public interest can be safeguarded, malpractices can be

identified and sanctioned, and effective remedies can be claimed. Examples include the right to information, public procurement, in accordance with best international practice, as well as the transposition of applicable international conventions.

b. **Existence and functioning of independent courts (not necessarily water-specific) and supreme audit institutions that can investigate water-related infringements and safeguard the public interest**
   This indicator seeks to appraise the existence and functioning of independent authorities and audit institutions (be they water-specific or not) to investigate water-related infractions through inspections and controls, enact sanctions in case of violation. Selected criteria for assessment include the effectiveness, capacity, independence and accessibility of such institutions.

c. **Existence and level of implementation of mechanisms (not necessarily water-specific) to identify potential drivers of corruption and risks in all water-related institutions at different levels, as well as other water integrity and transparency gaps**
   This indicator seeks to appraise the existence and the level of implementation of mechanisms that can diagnose, discourage and/or prevent poor transparency and integrity practices at different levels. Examples include integrity scans, multi-stakeholder approaches, social witnesses, social monitoring (e.g. to track consumer perceptions and petty corruption in water management), auditable anti-corruption plans, risk analysis and risk maps.

1.9.2 Checklist

- When roles and responsibilities for water supply and sanitation service delivery, water resources management, or disaster risk reduction are delegated to dedicated public or private entities, are there contractual arrangements between organising and executive bodies?
- Are relevant international conventions, resolutions or frameworks related to transparency and integrity transposed into national legislation?
- Are there institutional anti-corruption plans, codes of conduct or integrity charters?
- Are executive, legislative and judiciary powers clearly separated?
- Are there provisions for whistle-blower protection in legal and institutional frameworks? Are whistle-blower policies internalised within all public water sector organisations?
- Are corruption risks and actual corruption in the water sector (e.g. manipulation of knowledge and information, bribery, extortion) diagnosed?
- Are there evaluation tools to track budget transparency in the water sector? For instance, the Open Budget Index of the International Budget Partnership
- Are water accounts separated to ensure traceability of the water money?
- Are there evaluation tools to track reporting on nepotisms and graft; evasion of rules and regulations; political capture; fraud; unethical practices, including those linked with petty corruption manipulated accounting; bad corporate management?

  Examples of petty corruption are. illegal connections, fraudulent metering and billing, etc.

- Are there mechanisms/tools to track transparency, accountability and participation in the water sector?

  Examples include. reviews of service providers' performance, water-related public expenditure reports, corporate reporting on the implementation of anti-corruption plans, etc.

- Are there mechanisms to assess the economic, social and environmental costs of water-related corruption?

Examples include integrity scans, integrity risk assessments, independent investigations including by the media.

- Are there processes and/or platforms for dialogue on the drivers to corruption and malpractices?
- Are there requirements in place for regular financial disclosure of assets, income and interests?
- Are anti-bribery management systems in place?

  For instance, the ISO 37001: 2016.

1.10 Principle 10: Stakeholder engagement

1.10.1 Indicators

a. Existence and level of implementation of legal frameworks to engage stakeholders in the design and implementation of water-related decisions, policies and projects
This indicator seeks to appraise the existence and level of implementation of legal frameworks to engage stakeholders in water related decision making. In all cases, they should discourage consultation capture and consultation fatigue through balanced representativeness as well as clarity and accountability on the expected use of stakeholders' inputs.

b. Existence and functioning of organisational structures and responsible authorities to engage stakeholders in water-related policies and decisions
This indicator seeks to appraise the existence and functioning of dedicated stakeholder engagement institutions or platforms, such as catchment-based authorities, decentralised assemblies, governing boards, national or subnational water councils or committees, as well as more informal forms of community-based engagement. A list of such mechanisms/institutions is available in OECD (2015), Stakeholder Engagement for Inclusive Water Governance (Chapter 5), and could be used as a basis.

c. Existence and level of implementation of mechanisms to diagnose and review stakeholder engagement challenges, processes and outcomes
This indicator seeks to appraise the existence and level of implementation of mechanisms to diagnose prominent obstacles, challenges or risks such as consultation capture, consultation fatigue or lack of resources (capacity and funding), but also processes and outcomes. This is important in order to learn, adjust and improve accordingly, including the evaluation of costs and benefits of engagement processes. Examples include satisfaction surveys, benchmarks, impact assessment, financial analysis, evaluation reports or multi-stakeholder workshops/meetings. Further details on such evaluation mechanisms can be found in Chapter 7 of OECD (2015), Stakeholder Engagement for Inclusive Water Governance.

1.10.2 Checklist

- Is the Arhus Convention and/or other legal and institutional frameworks for stakeholder engagement adopted?
- Was a stakeholder mapping carried out to make sure that all those who have a stake in the outcome or that are likely to be affected are clearly identified, and their responsibilities, core motivations and interactions understood?
- Are the ultimate line of decision making, the objectives of stakeholder engagement and the expected use of inputs clearly defined?
- Are there mechanisms or regular assessments of stakeholder engagement costs or obstacles at large?

- Is needed information for result-oriented stakeholder engagement shared?
- Is the type and level of engagement customised and the process flexible to adjust to changing circumstances?
- Is there a national multi-stakeholder co-ordination platform including representatives from public, private and non-profit sectors and different categories of users?
- Are there mechanisms in place to engage science in decision making?
- Are there formal and informal mechanisms to engage stakeholders?
- Do tailored communication strategies exist for relevant stakeholders, including the general public, regarding all aspects of water management?

1.11 Principle 11: Trade-offs across users, rural and urban areas, and generations

1.11.1 Indicators

a. Existence and level of implementation of formal provisions or legal frameworks fostering equity across water users, rural and urban areas, and generations

This indicator seeks to appraise the existence and functioning of provisions and frameworks fostering equity across users, rural and urban areas and generations. Equity can be understood in terms of outcomes (to ensure that costs and benefits are distributed fairly) as well as in terms of processes (to ensure that water users are treated fairly). Such frameworks should incentivise non-discriminatory participation in decision-making across people, especially vulnerable groups and people living in remote areas, promote rural-urban linkages, and minimise social, financial and environmental liabilities on future generations. Examples of such frameworks include the effective transposition of international binding and non-binding regulations or soft law that the country may be subject to (e.g. human right to drinking water and sanitation, sustainable development goals, new urban agenda) as well as other forms of incentives.

b. Existence and functioning of an Ombudsman or institution(s) to protect water users, including vulnerable groups

This indicator seeks to appraise the existence and functioning of an Ombudsman or dedicated institutions (not necessarily water-specific) protecting vulnerable groups, mediating disputes, addressing users complaints and managing trade-offs when need be.

c. Existence and implementation of mechanisms or platforms to manage trade-offs across users, territories and/or over time in a non-discriminatory, transparent and evidence based manner

This indicator seeks to appraise the existence and level of implementation of mechanisms or platforms to promote non-discriminatory, transparent and evidence-based decision making on trade-offs needed across people, time and places. This could include public debates and rural-urban co-operation (partnerships, projects, etc.).

1.11.2 Checklist

- Are there requirements/frameworks for prioritisation among water uses in case of scarcity or emergency situations?
- Are there explicit measures in place to identify access to water services by vulnerable groups, such as First Nation communities, refugees, economic migrants and the homeless?
- Are rural-urban linkages clearly identified and addressed in water management?
- Are there social tariffs or other measures for vulnerable categories of water users?
- Are the capacity to pay and willingness to pay of water users evaluated through solid economic analysis and dedicated surveys?

- Are analyses for supporting decision making carried out in case of conflicting objectives across users, or geographical/social disparities in accessing water resources and services? (e.g. multi-criteria decision analysis, cost-benefit analysis).

1.12 Principle 12: Monitoring and evaluation

1.12.1 Indicators

a. Existence and level of implementation of policy frameworks promoting regular monitoring and evaluation of water policy and governance

This indicator seeks to appraise the existence and functioning of frameworks promoting regular monitoring and evaluation of water policy and governance, in order to effectively guide decision making.

b. Existence and functioning of institutions in charge of monitoring and evaluation of water policies and practices and help adjust where need be

This indicator seeks to appraise the existence and functioning of monitoring institutions (not necessarily water-specific) that are endowed with sufficient capacity, resources, autonomy and legitimacy to produce evidence-based assessment on the performance of water management and governance and support decision making accordingly. Such institutions should be independent from political interference, at arm's length from water managers and accountable for the outcomes of their evaluation and monitoring.

c. Existence and level of implementation of monitoring and evaluation mechanisms to measure to what extent water policy fulfils the intended outcomes and water governance frameworks are fit-for-purpose

This indicator refers to mechanisms such as: ex post evaluations, as well as water governance reviews, national assessments, etc.

1.12.2 Checklist

- Do formal requirements exist for evaluation and monitoring?
- Are there agreed-upon key performance indicators?
- Do monitoring and reporting mechanisms exist?

  Examples are joint sector reviews, surveys/polls, benchmarking, evaluation reports, ex post financial analysis, regulatory tools, national observatories, parliamentary consultations, etc.

- Are there provisions or incentives for civil society monitoring?
- Are there financial resources available to train civil society organisations in project monitoring?
- Are the results of the monitoring and evaluation process shared with the wider public?
- Does a national co-ordination platform or alike produce evaluation and monitoring reports for parliamentarian discussion on water issues?

2 OECD WGIF PROCESS

The OECD WGIF comprises three phases and 10 steps (OECD, 2018). The phases and steps are discussed below. Observations by the research team are marked in blue.

2.1 PREPARATION

Step 1: Check the roles and responsibilities of the lead institution
During this step a lead institution who will be carrying out the assessment is identified. The lead institution should ideally be a public or government authority who has water resources or water services management responsibilities. Furthermore, the lead institution should be in a power position to be able to gather the stakeholders required to carry out the assessment. It would be an advantage if the lead institution has experience in monitoring and assessing water policies, programmes and projects, as well as conducting multi-stakeholder workshops.

Step 2: Understand the principles and indicators framework
According to the OECD (2018:75), the first step for an effective evaluation process is to have a clear understanding of the OECD principles and their corresponding indicators. The OECD WGIF has been translated into 16 languages to help in this regard. After the stakeholders involved in the process has been mapped (step 4), they should receive the self-assessment material (principles, indicators, checklist, etc.) so that they can familiarise themselves with it before the workshop takes place. The document was not clear on who should hand out these documents to the stakeholders. The lead institution? The lead institution should help clarify concepts and definitions as well as address any questions or doubts that the stakeholders might have.

Step 3: Set objectives and scope of assessment
The lead institution sets the objectives and scope of the self-assessment task. All the stakeholders involved in the assessment should agree on the objectives and scope. Thus, the objectives and scope could be adjusted after the stakeholders have been identified and they have been told about the process (see step 4).

Step 4: Map stakeholders and their core motivations
During this step the lead institution identifies stakeholders to be part of the self-assessment task. It is important that there is a minimum level of representation of several categories of stakeholders, such as relevant ministries and public agencies across levels of government, different current and potential future categories of water users, water and sanitation utilities, economic and environmental regulators, civil society, policy makers, scientific organisations/academia, key players from the private sector, donor agencies, financial institutions, etc.

Step 5: Appoint an independent and trusted facilitator
An independent and trusted facilitator should be appointed to work closely with the lead institution throughout the assessment task. The document was not clear on who should appoint the external facilitator and if it should be the lead institution. The facilitator should remain neutral and impartial to ensure that the voices of the stakeholders are heard during the assessment task. The facilitator should also serve as a mentor, guiding the lead institution and stakeholders towards a clear understanding of the principles and the indicator framework before and during the assessment task.

Step 6: Agree on the rules of the procedure
The lead institution should organise a series of workshops with the stakeholders to share information and opinions, gather data and identify possible ways forward for improving water governance. The facilitator should ensure balanced participation, allowing the stakeholders to pass individual opinions/scores and collectively discuss and dispute the gathered opinions/scores. This information does not talk about the rules of the procedure. The information fits better under step 7.

2.2 DIAGNOSIS

Step 7: Organise the multi-stakeholder workshops to assess the water governance system against the traffic light and the checklist, and design the Action Plan
Three workshops are considered to be a minimum for an in-depth assessment of the water governance system in place. The assessment task could include all the OECD principles, or a selection of principles based on the needs of the stakeholders.

During each workshop the following actions should take place:

1. Present the principles and the indicator framework.
2. Discuss the indicator statements and the checklist.
3. Clarify any misinterpretations and understand the reasons of drastic diverging opinions, both on the level of implementation of certain governance dimensions and on priorities of actions for the future.
4. Report on future intended actions in the Action Plan.

2.3 ACTION

Step 8: Link actions with the existing policy framework, strategies and plans
The Action Plan is a useful starting point to identify the human, technical and financial resources needed to put the actions into place and to establish a timeline for implementation. This is a very vague explanation of what the action plan should entail. It is important that the actions are linked to existing policy frameworks, strategies and plans, in order to complement and improve existing tools.

Step 9: Set up an accountability process to track progress over time and keep the dialogue alive
It is important to keep the dialogue alive among stakeholders during the implementation of the actions. The leading institution should provide future opportunities for stakeholders to continue to engage and track progress on their defined objectives. An accountability process should be set up to help facilitate this and verify whether inputs from stakeholders were considered and addressed.

Step 10: Consider repeating the self-assessment every three years
The result of the first self-assessment task could serve as baseline for future assessments. The OECD considers three years as a minimum time lag between the baseline and the possibility that changes in the governance system have actually occurred.

3 MuSSA STATEMENTS AND RESPONSE OPTIONS

Context Information		Answers								
C1	Municipality name									
C2	Date of completion									
C3	Municipality type	A - Metro	B1 - LM	B2 - LM	B3 - LM	B4 - LM	C2 - DM			
C4	Water service provider type	Internal (i.e. municipality)	External (e.g. Water Board, service provider)	Combination of internal and external						
C5	Wastewater service provider type	Internal (i.e. municipality)	External (e.g. Water Care Company, service provider)	Combination of internal and external						
C6	Water system maintenance	Internal (i.e. municipality)	External (e.g. service provider)	Combination of internal and external						
C7	Wastewater system maintenance	Internal (i.e. municipality)	External (e.g. service provider)	Combination of internal and external						
C8	You are able to respond within necessary timeframes to emergencies, via internal staff and resources, or through other procurement processes (e.g. 'as and when' required contracts)	Yes, strongly agree	In place, with occasional non-optimal response	Partially in place, but not ideal	No, disagree	Don't know				
C9	The key staff (i.e. managerial) turnover in your WSA	High: > 25% (i.e. problematic, frequently lose staff)	Moderate: 10 - 25% (i.e. occasionally lose staff)	Low: < 10% (i.e. not an issue, good staff retention)	Don’t know					
C10	Your WSA has developed and implemented a scarce skills policy	Yes, developed and implemented	Yes, developed and partially implemented	In development	No, not developed	Don’t know				
C11	Your WSA is preparing for the impacts of pending and/or new regulations (for e.g. Regulation 813 (previously Regulation 17) (WTW and WWTW process controllers))	Yes, strongly agree	In process	No, disagree	Don't know					
C12	Your WSA actively provides required drinking water related data to the Regulator (e.g. Blue Drop participation)	Yes, strongly agree	In process	No, disagree	Don't know					

C13	Regular drinking-water quality monitoring and management (including boreholes) is performed for ALL communities/towns in the WSA	Yes, all (i.e. 100% of WSA population)	Almost all (i.e. >95% of WSA population)	Most (i.e. >75% of WSA population)	Some (i.e. >50% of WSA population)	<50% of WSA population	None (i.e. 0% of WSA population)	Don't know		
C14	WTWs operational capacity as a function of total design capacity (***NOTE:*** Combine for ALL WTWs within your WSA)	>105%	>100% - 105%	>95% - 100%	90% - 95%	<90%	Don't know	Not applicable		
C15	Your WSA actively provides required wastewater related data to the Regulator (e.g. Green Drop participation)	Yes, strongly agree	In process	No, disagree	Don't know					
C16	Regular wastewater quality monitoring and management is performed for ALL wastewater systems in the WSA	Yes, all (i.e. 100%)	Almost all (i.e. >95%)	Most (i.e. >75%)	Some (i.e. >50%)	<50%	None (i.e. 0%)	Don't know		
C17	WWTWs operational flow capacity as a function of total design capacity (***NOTE:*** Combine for ALL WWTWs within your WSA)	>105%	>100% - 105%	>95% - 100%	90% - 95%	<90%	Don't know	Not applicable		
C18	WWTWs operational COD load as a function of total design load (***NOTE:*** Combine for ALL WWTWs within your WSA)	>105%	>100% - 105%	>95% - 100%	90% - 95%	<90%	Don't know	Not applicable		
C19	Your WSA actively provides required water conservation and water demand management related data to the Regulator (e.g. No Drop participation)	Yes, strongly agree	In process	No, disagree	Don't know					
C20	Your WSA actively promotes improved hygiene practices through campaigns in communities (e.g. hand washing education, safe and improved sanitation)	Yes strongly agree (i.e. campaigns established and functioning)	Partially in place, but not ideal	No, disagree	Don't know					
C21	Billing & accounts - With regards to water and sanitation bills, please indicate the frequency of billing and posting of accounts.	Actual billing and posting of accounts on a monthly basis	Actual billing and posting of accounts at least every 2nd month	Billing and posting of accounts at least on a quarterly basis	Billing and posting of accounts less frequently than quarterly	Don't know				

C22	Development contributions - With regard to new developments, by-laws in your municipality require developers to adequately contribute towards construction of new bulk infrastructure (i.e. developers charges).	Yes, strongly agree	In place, with occasional non-optimal response	in process	No, disagree	Don't know				
C23	Please indicate what proportion of your requested water and sanitation services budget (CAPEX and OPEX) is actually funded?	100%	>90% - 100%	>80% - 90%	>70% - 80%	<70%	Don't know			
C24	Council is stable with functional Council meetings.	Yes, strongly agree (i.e. Council meetings are held at least quarterly)	Partially in place, but not ideal	No, disagree	Don't know					
C25	Council has functional Oversight Committees and Ward Committees, as appropriate (DM would be served via LM Ward Committees)	Yes, strongly agree (i.e. Oversight and Ward Committees established and functioning)	Partially in place, but not ideal	No, disagree	Don't know					
C26	Council has effective systems of internal control and functional governance structures (internal audit unit, audit committee, risk committee, IT governance)	Yes, strongly agree (i.e. internal audit unit established and posts filled, governance structures in place, frequent meetings held and risk assessments conducted, audit plan developed and quarterly reports submitted to council)	Partially in place, but not ideal	No, disagree	Don't know					
C27	Forensic investigations are undertaken as and when necessary to ensure adherence to governance requirements (i.e. either internally initiated by the municipality or externally initiated by, for example, Public Protector, Auditor General)	Yes, strongly agree	Partially in place, but not ideal	No, disagree	Don't know					

C28	Your municipality actively implements actions against identified instances of fraud and corruption, maladministration and failure to fulfil statutory obligations	Yes, strongly agree	In place, with occasional non-optimal response	Partially in place, but not ideal	No, disagree	Don't know				
C29	Your municipality has policies, procedures and systems in place that negate the impact of vandalism / sabotage of municipal water and sanitation infrastructure on services delivery	Yes, strongly agree	In place, with occasional non-optimal response	Partially in place, but not ideal	No, disagree	Don't know				
C30	Your municipality has ongoing and appropriate public participation, is transparent in its decision making, and is accountable to its constituency (fiscal and social).	Yes, strongly agree	Partially in place, but not ideal	No, disagree	Don't know					
C31	Those of your 18 MuSSA Business Aspects which reflect Extreme and/or Highly Vulnerable, are included within your WSAs Corporate Risk Register	Yes, strongly agree	Partially in place, but not ideal	No, disagree	Don't know					
C32	Your MuSSA was completed with appropriate inputs from senior officials within Technical Services, Finance and Human Resources (as a minimum these 3 departments should participate).	Yes, strongly agree (i.e. Technical Services HOD, Finance **AND** HR all participated)	Agree (i.e. Technical Services HOD and either Finance **OR** HR participated)	Only Technical Services HOD	Other Technical Services	Don't know				
C33	Names, designation and contact details (phone, email) of all those who contributed to completion of MuSSA 2017 update (e.g. Mr Thabo Smit; Technical Director; 0215436789; thabos@muni.gov.za)									

1. Water and Sanitation Services Planning		Answers								
1,1	Your appropriate water and sanitation services planning (e.g. WSDP) and associated master planning processes include and are aligned with appropriate Water and Sewage Master Plans, Spatial Development Framework (SDF), Water Safety Plans and Wastewater Risk Abatement Plans (W_2RAPs), and are aligned to your IDP and associated SDBIP targets.	Yes, appropriate water services plans are developed and include all required plans and alignment (i.e. 100%)	Yes, appropriate water services plans are developed and include all required plans and alignment (i.e. > 95%)	Yes, appropriate water services plans are developed and include all required plans and alignment (i.e. > 75%)	Yes, appropriate water services plans are developed and include all required plans and alignment (i.e. > 50%)	Plans still in development	Plan development not yet initiated	Don't know	Plans being reviewed and aligned	
1,2	You are implementing an up-to-date and adopted municipal water and sanitation services plan (e.g. WSDP.)	Yes, municipal water and sanitation services plans up-to-date, adopted and implemented	Municipal water and sanitation services plans adopted and implemented, but out-of-date (i.e. requires revision)	Municipal water and sanitation services plans adopted but not yet implemented	Municipal water and sanitation services plans not adopted but implemented	Municipal water and sanitation services plans neither adopted nor implemented	Don't know			
1.3	Your current project list addresses existing needs/shortcomings identified through the WSDP and associated master planning process.	Yes, all projects are identified via the planning process (i.e. 100%)	Almost all (i.e. >95% of projects)	Most projects (i.e. >75%)	Some projects (i.e. >50%)	<50% of projects	None (i.e. 0%)	Don't know		
1.4	Project progress is monitored, tracked and reported to municipal top management/council and the Regulator (through the annual water and sanitation services report)	Yes, strongly agree (both to municipal top management/council and Regulator)	Only to municipal top management/council	Only to Regulator	No, disagree	Don't know				
1.5	Projects identified through your various planning processes have been implemented in the last 3 years.	Yes, all projects identified via planning have been implemented (i.e. 100%)	Almost all implemented (i.e. >95%)	Most implemented (i.e. >75%)	Some implemented (i.e. >50%)	<50% implemented	None implemented (i.e. 0%)	Don't know		

2. Management Skill Level (Technical)		Answers								
2,1	Your council approved technical management organisational organogram meets your business requirements, and key posts are filled (e.g. Technical Director, Water Services Manager, Sanitation Services Manager).	Yes, and all posts filled (i.e. 100%)	Yes, and almost all posts filled (i.e. >95%)	Yes, and most posts filled (i.e. >75%)	Yes, but only some posts filled (i.e. >50%)	Yes, but <50% of posts filled	No, does not meet business requirements	Don't know		
2,2	You have sufficient technical management and technical support staff.	Yes, 100% as per approved organogram	Yes, strongly agree (i.e. >95% as per approved organogram)	Mostly agree (i.e. >75% as per approved organogram)	Agree somewhat (i.e. >50% as per approved organogram)	<50% as per approved organogram	None (i.e. 0% as per approved organogram)	Don't know		
2,3	Technical management and technical support staff have the correct skills/qualifications and experience as per Job Description requirements (e.g. if Job Description requires PrEng, PrTech or CPM, the staff have these qualifications).	Yes, all (i.e. 100%)	Almost all (i.e. >95%)	Most (i.e. >75%)	Some (i.e. >50%)	<50%	None (i.e. 0%)	Don't know		
2,4	Managers and technical support staff regularly attend appropriate water and sanitation services skills development/training to support professionalisation	Quarterly (or more frequent) skills development/ training	Bi-annual skills development/ training	Annual skills development/ training	Less frequent skills development/ training (i.e. >1 year)	No skills development/ training	Don't know			
2,5	Key technical managers (e.g. Section 56 and other Senior Management) have signed and monitored Performance Agreements.	Yes, all (i.e. 100%)	Almost all (i.e. >95%)	Most (i.e. >75%)	Some (i.e. >50%)	<50%	None (i.e. 0%)	Don't know		

3. Staff Skill Levels (Technical)		Answers								
3,1	WTWs are operated by staff with the required skills/qualifications and experience (as per Regulation 2834).	Yes, all (i.e. 100%)	Almost all (i.e. >95%)	Most (i.e. >75%)	Some (i.e. >50%)	<50%	None (i.e. 0%)	Don't know	Not applicable	
3,2	WWTWs are operated by staff with the required skills/qualifications and experience (as per Regulation 2834).	Yes, all (i.e. 100%)	Almost all (i.e. >95%)	Most (i.e. >75%)	Some (i.e. >50%)	<50%	None (i.e. 0%)	Don't know	Not applicable	
3,3	Water system plumbers, millwrights, mechanics and electricians have the required skills/qualifications and experience (including contractors/outsourced resources)	Yes, all (i.e. 100%)	Almost all (i.e. >95%)	Most (i.e. >75%)	Some (i.e. >50%)	<50%	None (i.e. 0%)	Don't know		
3,4	Sewage system plumbers, millwrights, mechanics and electricians have the required skills/qualifications and experience (including contractors/outsourced resources)	Yes, all (i.e. 100%)	Almost all (i.e. >95%)	Most (i.e. >75%)	Some (i.e. >50%)	<50%	None (i.e. 0%)	Don't know		
3,5	Staff regularly attend appropriate water and sanitation services skills development/training (including safety) (e.g. ESETA courses).	Quarterly (or more frequent) skills development/ training	Bi-annual skills development/ training	Annual skills development/ training	Less frequent skills development/ training (i.e. >1 year)	No skills development / training	Don't know			
4. Technical Staff Capacity (Numbers)		Answers								
4,1	Your council approved technical staff organisational organogram meets your business requirements, and posts are filled (i.e. Superintendent of WTWs/WWTWs and below).	Yes, and all posts filled (i.e. 100%) as per the approved organogram	Strongly agree, and most posts filled (i.e. >95%) as per the approved organogram	Yes, and most posts filled (i.e. >75%) as per the approved organogram	Yes, but only some posts filled (i.e. >50%) as per the approved organogram	Yes, but <50% of posts filled as per the approved organogram	No, does not meet requirements	Don't know		
4,2	WTWs are operated by the appropriate number of staff (as per Regulation 2834).	Yes, 100% as per requirements	Strongly agree (i.e. >95% as per requirements)	Mostly agree (i.e. >75% as per requirements)	Agree somewhat (i.e. >50% as per requirements)	<50% as per requirements	None (i.e. 0% as per requirements)	Don't know	Not applicable	

4,3	WWTWs are operated by the appropriate number of staff (as per Regulation 2834).	Yes, 100% as per requirements	Strongly agree (i.e. >95% as per requirements)	Mostly agree (i.e. >75% as per requirements)	Agree somewhat (i.e. >50% as per requirements)	<50% as per requirements	None (i.e. 0% as per requirements)	Don't know	Not applicable	
4,4	You have sufficient water and sewerage/sanitation network operations and repair staff/plumbers including contractors/outsourced resources (i.e. you have the appropriate number of staff).	Yes, 100% as per functional requirements	Strongly agree (i.e. >95% as per functional requirements)	Mostly agree (i.e. >75% as per functional requirements)	Agree somewhat (i.e. >50% as per functional requirements)	<50% as per functional requirements	None (i.e. 0% as per functional requirements)	Don't know		
4,5	An active mentoring/shadowing programme is in place where experienced staff train your younger, inexperienced municipal staff.	Yes, strongly agree	In place, but not ideal	No, disagree	Don't know					
5. Water Resource Management (WRM)		**Answers**								
5,1	The recommendations and actions from the Reconciliation Strategies (Large Systems/All Towns) have been incorporated into your WSDP, master planning and IDP processes.	Yes, strongly agree	In process	No, disagree	Don't know	Not applicable				
5,2	The metered quantity of water available from the resources is sufficient for your current WSA needs (at the stipulated level of abstraction and assurance of supply).	No shortage (i.e. sufficient water)	1 - 10% shortage	11-20% shortage	21-30% shortage	31-40% shortage	41-50% shortage	>50% shortage	Don't know	Not applicable
5,3	The metered quantity of water available from the resources is sufficient for your future WSA needs (at the stipulated level of abstraction and assurance of supply, and considering possible climate change impacts) (i.e. no shortage in 10 years).	No shortage (i.e. sufficient water)	1 - 10% shortage	11-20% shortage	21-30% shortage	31-40% shortage	41-50% shortage	>50% shortage	Don't know	Not applicable
5,4	The source water quality is currently acceptable for its purpose.	Yes, strongly agree (i.e. all sources (100%) by water volume are acceptable)	Mostly agree (i.e. >75% of sources by water volume are acceptable)	Agree somewhat (i.e. >50% of sources by water volume are acceptable)	<50% of sources by water volume acceptable	None (i.e. 0% of sources by water volume are acceptable)	Don't know	Not applicable		

5,5	The trend indicates a deteriorating source water quality.	Yes, all sources (100%) by water volume are deteriorating	>75% of sources by water volume are deteriorating	>50% of sources by water volume are deteriorating	>25% of sources by water volume are deteriorating	< 25% of sources by water volume are deteriorating	No, no sources (0%) are deteriorating	Don't know	Not applicable	
6. Water Conservation & Water Demand Management (WC/WDM)		**Answers**								
6,1	Your WSA has developed a council approved Water Conservation and Water Demand Strategy which includes a standard water balance (e.g. modified IWA).	WC/WDM Strategy and water balance developed	Only WC/WDM Strategy developed	Only water balance developed	None developed	Don't know				
6,2	Please indicate your percentage Non-Revenue Water (NRW) as per the modified IWA water balance.	Less than 15%	Less than 20%	Less than 30%	Less than 40%	Less than 50%	50% or more	Don't know		
6,3	System input volumes (bulk) to the WSA are accurately monitored using calibrated bulk meters (e.g. check metering).	Yes, all (i.e. 100%)	Almost all (i.e. >95%)	Most (i.e. >75%)	Some (i.e. >50%)	<50%	None (i.e. 0%)	Don't know		
6,4	Please indicate what percentage of all connections are metered and billed (residential and non-residential (commercial, industrial, etc.)) on a monthly basis.	>98%	75% - 98%	50% - 75%	<50%	< 25%	No metering	Don't know		
6,5	Your WSA is implementing appropriate intervention programmes to reduce NRW (e.g. minimisation of night flows through pressure management, removal of unlawful connections, leak detection and repairs, consumer education/awareness).	Yes, strongly agree (i.e. 100% implementation)	Mostly agree (i.e. >75% implementation)	Agree somewhat (i.e. >50% implementation)	<50% implementation	No implementation (i.e. 0%)	Don't know			
7. Drinking Water Safety & Regulatory Compliance		**Answers**								
7,1	Please indicate your microbiological drinking-water quality compliance for *E.coli* (or faecal coliforms) for the communities you are monitoring, for the last 12 months.	99% - 100%	97% - <99%	95% - <97%	< 95%	Don't know				
7,2	ALL your supply schemes, WTWs, process controllers, monitoring programmes, sample points, laboratories, results, procedures, protocols, etc. are managed with a suitable Water Safety Planning framework.	Yes, strongly agree (i.e. 100% covered)	Strongly agree (i.e. >95% covered)	Mostly agree (i.e. >75% covered)	Agree somewhat (i.e. >50% covered)	<50% covered	None covered (i.e. 0%)	Don't know		

7,3	Council have been made aware of high risk / critical water safety plan related issues (including those identified via the Blue Drop Certification programme) that require budget and actioning, and these issues have been actioned (where applicable).	Yes, strongly agree (i.e. all (100%) tabled)	Strongly agree (i.e. >95% tabled)	Mostly agree (i.e. >75% tabled)	Agree somewhat (i.e. >50% tabled)	<50% tabled	Issues noted but none tabled (i.e. 0%)	Not applicable (no issues requiring council resolution exist)	Don't know	
7,4	Sufficient funds have been made available to address all these identified water safety related issues.	Yes, strongly agree (i.e. 100% of required funds)	Strongly agree (i.e. >95% of required funds)	Mostly agree (i.e. >75% of required funds)	Agree somewhat (i.e. >50% of required funds)	<50% of required funds	Issues noted but no funds (i.e. 0%)	Not applicable (no issues requiring funding exist)	Don't know	
7,5	Required corrective actions/remedial measures to address all these identified water safety related issues have been successfully implemented.	Yes, strongly agree (i.e. 100% implementation)	Strongly agree (i.e. >95% implementation)	Mostly agree (i.e. >75% implementation)	Agree somewhat (i.e. >50% implementation)	<50% implementation	Issues noted but no implementation (i.e. 0%)	Not applicable (no issues requiring corrective actions exist	Don't know	

8. Basic Sanitation		Answers							
8,1	You have formal housing areas that are not fully serviced with sanitation infrastructure	No, all formal areas are fully serviced (i.e. no bucket sanitation service)	Yes, but these are new households that will be serviced within 2 years	Yes, still trying to meet formal backlog but >90% are serviced	Yes, still trying to meet formal backlog with 80 - 90% serviced	Yes, still trying to meet formal backlog with 60 - 80% serviced	Yes, still trying to meet formal backlog with <60% serviced (e.g. occurrence of bucket systems, existence of open defecation)	Don't know	
8,2	You have informal housing or rural areas that are not fully serviced with sanitation infrastructure	No, all informal and rural areas are fully serviced	We have no informal areas and rural areas are serviced	Yes, but these are new households that will be serviced within 2 years	Yes, still trying to meet informal or rural backlog with >90% serviced	Yes, still trying to meet informal or rural backlog but 80- 90% are serviced	Yes, still trying to meet informal or rural backlog with 60 - 80% serviced	Yes, still trying to meet informal or rural backlog with <60% serviced (e.g. occurrence of bucket systems, existence of open defecation)	Don't know
8,3	You have a detailed plan and programme to provide safe sanitation to all households (including health and hygiene education and user awareness including Water, Sanitation and Health (WASH) aspects)	Yes, strongly agree (i.e. 100% implementation)	Strongly agree (i.e. >95% implementation)	Mostly agree (i.e. >75% implementation)	Agree somewhat (i.e. >50% implementation)	<50% implementation	No implementation (i.e. 0%)	Don't know	Not applicable
8,4	Your sanitation budget is appropriate for required sanitation programmes (implementation and O&M)	Yes, strongly agree (i.e. 100% of required funds)	Mostly agree (i.e. >95% of required funds)	Some shortfall (i.e. >75% of required funds)	Disagree, significant shortfall (50-75% of required funds)	Serious underfunding (<50% of required funds)	No funds (i.e. 0%)	Don't know	Not applicable

8,5	You are servicing your basic sanitation facilities (e.g. pit latrines) as per safe sanitation requirements (healthy, environmentally safe, structurally sound, regularly maintained, following faecal sludge management best practices).	Yes, 100% as per requirements	Strongly agree (i.e. >95% as per requirements)	Mostly agree (i.e. >75% as per requirements)	Agree somewhat (i.e. >50% as per requirements)	No, we only manage to service <50% of the sanitation infrastructure	No, we have serious shortfalls in the servicing of sanitation infrastructure (i.e.<20 %)	Don't know	Not applicable
9. Wastewater/Environmental Safety & Regulatory Compliance		**Answers**							
9,1	Please indicate your treated wastewater effluent compliance for COD for your (or your service provider's) WWTWs for the last 12 months.	>95%	90% - 95%	80% - <90%	<80%	Don't know			
9,2	ALL your WWTWs, process controllers, monitoring programmes, sample points, laboratories, results, procedures, protocols, etc. are managed with a suitable waste water risk abatement framework.	Yes, strongly agree (i.e. 100% covered)	Agree (i.e. >95% covered)	Mostly agree (i.e. >75% covered)	Agree somewhat (i.e. >50% covered)	< 50% covered	None covered (i.e. 0%)	Don't know	
9,3	Council have been aware of all W_2RAP related issues (e.g. pollution incidents, Green Drop deficiencies) that require budget and actioning, and these issues have been actioned (where applicable).	Yes, strongly agree (i.e. all (100%) tabled)	Agree (i.e. >95% covered)	Mostly agree (i.e. >75% tabled)	Agree somewhat (i.e. >50% tabled)	< 50% tabled	Issues noted but none tabled (i.e. 0%)	Not applicable (no issues requiring council resolution exist)	Don't know
9,4	Sufficient funds have been made available to address all identified wastewater and environmental safety related issues.	Yes, strongly agree (i.e. 100% of required funds)	Agree (i.e. >95% covered)	Mostly agree (i.e. >75% of required funds)	Agree somewhat (i.e. >50% of required funds)	< 50% of required funds	Issues noted but no funds (i.e. 0%)	Not applicable (no issues requiring funding exist)	Don't know
9,5	Required corrective actions/remedial measures to address all identified wastewater and environmental safety related issues have been successfully implemented.	Yes, strongly agree (i.e. 100% implementation)	Agree (i.e. >95% covered)	Mostly agree (i.e. >75% implementation)	Agree somewhat (i.e. >50% implementation)	<50% implementation	Issues noted but no implementation (i.e. 0%)	Not applicable (no issues requiring corrective actions exist)	Don't know

10. Infrastructure Asset Management (IAM)		Answers							
10,1	You have an appropriate and up-to-date water and sanitation services technical Asset Register (includes asset name, location, condition, extent, remaining useful life, performance and risk). ***NOTE:*** This does only not refer to GRAP17 asset register requirements.	Yes, strongly agree (e.g. advanced asset register)	Yes, agree (e.g. basic asset register - i.e. not all aspects included)	Not ideal (e.g. outdated asset register)	No, disagree (i.e. no asset register)	Don't know			
10,2	You have developed an appropriate Infrastructure Asset Management (IAM) Plan for your WSA.	Yes, strongly agree	Partially in place, but not ideal	No, disagree	Don't know				
10,3	You are implementing the IAM outcomes	Yes, strongly agree (i.e. 100% implementation)	Agree (i.e. >95% implementation)	Mostly agree (i.e. >75% implementation)	Agree somewhat (i.e. >50% implementation)	< 50% implementation	No implementation (i.e. 0%)	Don't know	
10,4	Budget allocated to implement IAM outcomes is sufficient and is being effectively spent.	Yes, strongly agree (i.e. 100%)	Agree (i.e. >95%)	Mostly agree (i.e. >75%)	Agree somewhat (i.e. >50%)	< 50%	No (i.e. 0%)	Don't know	
10,5	You conduct annual technical assessments of your water and wastewater related systems (including sources, WTWs, WWTWs, pump stations, network, etc.) and implement required follow-up actions.	Yes, all systems (i.e. 100%)	Almost all systems (i.e. >95%)	Most systems (i.e. >75%)	Some systems (i.e. > 50%)	< 50% systems	No systems (i.e. 0%)	Don't know	Not applicable
11. Operation & Maintenance of Assets		Answers							
11,1	Appropriate maintenance facility(ies) that is(are) secure and stocked with essential equipment (e.g. spare parts), plant and tools is(are) available.	Yes, strongly agree	Partially in place, but not ideal	No, disagree	Don't know				
11,2	Appropriate water and sanitation services infrastructure/equipment planned/preventative maintenance schedules are developed.	Yes, strongly agree	Partially in place, but not ideal	No, disagree	Don't know				
11,3	Appropriate planned/preventative maintenance is performed at all WTWs and associated reservoirs, pump stations, distribution network.	Yes, all (i.e. 100%)	Most (i.e. >75%)	Some (i.e. > 50%)	< 50%	None (i.e. 0%)	Don't know		
11,4	Appropriate planned/preventative maintenance is performed at all WWTWs and associated collection system, pump stations.	Yes, all (i.e. 100%)	Most (i.e. >75%)	Some (i.e. > 50%)	< 50%	None (i.e. 0%)	Don't know		

11,5	Please indicate your infrastructure repairs and maintenance costs as a function of total operating expenditure (%).	<5%	5% - <8%	8% - <10%	10% - <15%	15% or more	Don't know		
12. Financial Management		**Answers**							
12,1	Financial controls - Please state the audit opinion with regard to your last audit report on the financial statements.	Clean audit outcome (i.e. unqualified with no findings)	Financially unqualified audit opinion (with findings)	Qualified audit opinion	Disclaimer of audit opinion	Adverse audit opinion	Don't know		
12,2	Cash flow status - Please state your Cash/Cost Coverage Ratio (excluding Unspent Conditional Grants)	> 90 days	60 - 90 days	30 - 60 days	< 30 days	Don't know			
12,3	Your actual operating expenditure closely reflects your budgeted operating expenditure (i.e. Operating Expenditure Budget Implementation Indicator)	95% - 100%	90% - <95%	85% - <90%	80% - <85%	<80%	Don't know	For water and sanitation	
12.4	Your actual revenue closely reflects your budgeted operating revenue (i.e. Operating Revenue Budget Implementation Indicator)	95% - 100%	90% - <95%	85% - <90%	80% - <85%	<80%	Don't know	Based on revenue as received, not as billed	
12,5	Liabilities (Creditors) - Money is owed by your municipality to major/critical service providers (e.g. ESKOM, Water Board, largest contractors, etc.) for more than 30 days from receipt of invoice (***NOTE***: Ignore disputed invoices)	Never	Once per year	Twice per year	Once per quarter	More frequently than quarterly	Don't know		
13. Revenue Collection		**Answers**							
13,1	Please indicate the frequency of actual consumer meter readings.	Actual meter reading on a monthly basis	Actual meter reading at least every 2nd month	Meter reading at least on a quarterly basis	Meter reading less frequently than quarterly	Don't know			

13,2	Net Surplus/Deficit - Please state your net surplus/deficit from water services activities for the last 12 months (**NOTE:** This question tests whether your WSA currently has fully cost reflective Water and Sanitation tariffs (which take into account cost of maintenance and renewal of purification plants and networks, and the cost of new infrastructure).	Surplus (i.e. >0%)	Breakeven (i.e. = 0%)	Net deficit (i.e. <0%)	Don't know				
13,3	Revenue collection - Please state the revenue collection rate in respect to Water & Sanitation Services (%)	<50%	50% - <70%	70% - <80%	80% - <95%	95% or more	Don't know		
13,4	Revenue Growth - Please state your Water and Sanitation Services revenue growth for the last financial year(%).	>CPI	Equals CPI	<CPI, but >0%	Negative growth (-ve)	Don't know			
13.5	Grant dependency - Actual operating revenue less operational grants/subsidies (e.g. equitable share) sufficiently covers actual operating expenditure.	Yes, all (i.e. 100%)	Most (i.e. >75%)	Some (i.e. > 50%)	< 50%	None (i.e. 0%)	Don't know		
14. Financial Asset Management		**Answers**							
14,1	Capital Expenditure (Municipal) - Please state your municipal Capital Expenditure as a percentage of Total Expenditure (i.e. Total Operating Expenditure + Capital Expenditure)	<5%	5% - <10%	10% - <15%	15% - <20%	20% or more	Don't know		
14.2	Capital Expenditure (Water Services) - Please state your Capital Expenditure on Water and Sanitation Services as a percentage of Total Capital Expenditure (Capital Expenditure (Municipal))	<25%	25% - <50%	50% - <75%	75% or more	Don't know			
14,3	Asset Renewal - Please state your Asset Renewal investment as percentage of Depreciation costs	100%	>90%	>75%	>50%	<50%	None (i.e. 0%)	Don't know	
14.4	Repairs and Maintenance - Please state your Repairs and Maintenance expenditure as a percentage of Property, Plant and Equipment, Investment Property (Carrying Value)	<5%	5% - <8%	8% - <10%	10% or more	Don't know			

14.5	Grant funding of capital expenditure - Please state your reliance on grant funding	>90%	> 75%	>50%	<50%	Don't know			
15. Information Management (IT)		**Answers**							
15,1	You have a developed, approved and implemented IT Master Systems Plan (e.g. covering 3 - 5 years) that addresses your IT business requirements.	Yes, developed, approved and being implemented	Developed and approved, but not yet implemented	Developed but not yet approved or implemented	In development	No, disagree	Don't know		
15.2	You have a developed, approved and implemented ICT Technology Master Plan that addresses your current and future IT infrastructure requirements.	Yes, developed, approved and being implemented	Developed and approved, but not yet implemented	Developed but not yet approved or implemented	In development	No, disagree	Don't know		
15.3	You have IT systems that support your full range of water and sanitation services business requirements (e.g. billing, GIS, customer care, O&M, asset management).	Yes, strongly agree (i.e. 100% of required systems)	Mostly agree (i.e. >75% of required systems)	Agree somewhat (i.e. >50% of required systems)	< 50% of required systems	None (i.e. 0% of required systems)	Don't know		
15,4	ICT service continuity - Adequate IT security exists with off-site back-ups/archiving of operation critical applications, databases, data, etc. routinely performed in terms of an IT Disaster Recovery Plan.	Yes, strongly agree (i.e. All (100%) in place)	Mostly agree (i.e. >75% in place)	Agree somewhat (i.e. >50% in place)	< 50% in place	Nothing in place (i.e. 0%)	Don't know		
15,5	You have sufficient budget and staff to keep key IT systems stable and up-to-date as per IT policies and procedures.	Yes, strongly agree (i.e. 100%)	Mostly agree (i.e. >75%)	Agree somewhat (i.e. >50%)	< 50%	No (i.e. 0%)	Don't know		
16. Organisational Performance Monitoring		**Answers**							
16,1	Appropriate plans, policies and procedures to address Disaster Management/emergencies and other issues (safety, public participation, communication, etc.) are developed and implemented. ***NOTE:*** Although Disaster Management is a district function, LMs need to ensure they are aware of their associated roles and responsibilities and have developed a Disaster Management Framework.	Yes, developed and implemented	Developed but not yet implemented	In development	No, disagree	Don't know			

16,2	An organisational performance management system is developed and implemented (i.e. effectively measure, monitor and track water and sanitation services performance indicators).	Yes, developed and implemented	Developed but not yet implemented	In development	No, disagree	Don't know			
16,3	A municipal risk management framework is developed and implemented and includes monitoring and tracking of water and sanitation related risks.	Yes, developed and implemented and includes water and sanitation related risks	Yes, developed and implemented but does not include water and sanitation related risks	Developed but not yet implemented	In development	No, disagree	Don't know		
16,4	Effective administration support is available to technical staff to assist with processing work orders, providing order numbers, handling correspondence, etc.	Yes, strongly agree (i.e. 100% effective)	Mostly agree (i.e. >75% effective)	Agree somewhat (i.e. >50% effective)	< 50% effective	No, completely ineffective (i.e. 0%)	Don't know		
16,5	"Access to Basic Water and Sanitation Services" progress reports are frequently produced and presented to council for discussion, action and follow-up.	At least quarterly	At least bi-annually	At least annually	Less frequently (i.e. > 1 year)	No, never	Don't know		
17. Water and Sanitation Service Quality		**Answers**							
17,1	Critical business databases and documents (e.g. as-built drawings, records, manuals, agreements, billing/revenue collection, project and scheme management data, etc.) are current, maintained and stored in secure locations (on-site and off-site, both paper and electronic).	Yes, strongly agree (i.e. 100% in place)	Mostly agree (i.e. >75% in place)	Agree somewhat (i.e. >50% in place)	< 50% in place	Nothing in place (i.e. 0%)	Don't know		
17,2	Customers have a functional, reliable and safe water supply system with sufficient quantity and flow, good quality, and minimal interruptions.	Yes, all have a functional, reliable and safe service (i.e. 100%)	At least 90% have a functional, reliable and safe service	Most have a functional, reliable and safe service (i.e. >75%)	Some have a functional, reliable and safe service (i.e. > 50%)	< 50% of customers have a functional, reliable and safe service	None have a functional, reliable and safe service (i.e. 0%)	Don't know	
17,3	All consumers served experience interruptions of less than 48 hours (at any given time) and a cumulative interruption time during the year of less than 15 days.	Yes, all (i.e. 100%)	>90% of households	>75% of households	>50% of households	<50% of households	None (i.e. 0%)	Don't know	

17,4	Households in your WSA do not experience water pressure problems (i.e. no flow/partial flow less than 10 litres/minute) (not to be confused with interruption to supply).	Yes, no households experience pressure problems (i.e. 100% do not experience pressure problems)	>90% of households do not experience pressure problems	>75% of households do not experience pressure problems	>50% of households do not experience pressure problems	<50% of households do not experience pressure problems	All households (i.e. 100%) experience pressure problems	Don't know	
17,5	Customers have a functional, reliable, dignified and safe sanitation system with no blockages resulting in overflows that impact on the environment, including effective collection and treatment of faecal sludge.	Yes, all customers have a functional, reliable, dignified and safe service with no impact on the environment (i.e. 100%)	> 98% of all customers have a functional, reliable, dignified and safe service with minimal impact on environmental health	Almost all have a functional, reliable, dignified and safe service (i.e. >90%)	Most have a functional, reliable, dignified and safe service (i.e. >75%)	Some have a functional, reliable, dignified and safe service (i.e. > 50%)	< 50% of customers have a functional, reliable, dignified and safe service	None have a functional, reliable, dignified and safe service (i.e. 0%)	Don't know
18. Customer Care (CRM)		**Answers**							
18,1	A functional customer service system manned by appropriate customer services representatives and using a complaints register, is in place to address complaints and appropriately inform customers of service interruptions, contamination of water, boil water alert, etc.	Yes, strongly agree	In place, with occasional non-optimal performance	Partially in place, but not ideal	No, disagree	Don't know			
18,2	Regular municipal wide customer satisfaction surveys are conducted to determine customer satisfaction levels and inform the Customer Care Management Plan	Annual customer satisfaction surveys	Biennial (i.e. every 2nd year) customer satisfaction surveys	Less frequent customer satisfaction surveys (i.e. > 2 years)	No customer satisfaction surveys	Don't know			
18,3	Please indicate what percentage of the reported water related complaints/callouts are acknowledged, including consumer response, within 24 hours.	All (i.e. 100%)	Almost all (i.e. >95%)	Most (i.e. >75%)	Some (i.e. > 50%)	< 50%	None (i.e. 0%)	Don't know	

18,4	Please indicate what percentage of the reported wastewater/sanitation related complaints/callouts are acknowledged, including consumer response, within 24 hours.	All (i.e. 100%)	Almost all (i.e. >95%)	Most (i.e. >75%)	Some (i.e. > 50%)	< 50%	None (i.e. 0%)	Don't know	
18,5	A comprehensive customer awareness programme (informing customers of water and wastewater system O&M activities, water quality, resource protection/pollution, reporting incidents/security concerns, etc.) is in place and implemented.	Yes, strongly agree	Partially in place, but not ideal	No, disagree (i.e. no awareness programme)	Don't know				

4 LINGUISTIC ANALYSIS OF SELECTED MUSSA STATEMENTS AND RESPONSE CATEGORIES

Notes:

- The tables are extracts from the MuSSA spreadsheet.
- The blue header column indicates the business health attribute to which the statement relates. The first example is from the context statements.
- The yellow header columns marked as 'Answers' give the response options for that particular statement.
- The specific issues (as per the framework of analysis in 0) are highlighted in turquoise.

Context Information		Answers								
C8	You are able to respond within necessary timeframes to emergencies, via internal staff and resources, or through other procurement processes (e.g. 'as and when' required contracts)	Yes, strongly agree	In place, with occasional non-optimal response	Partially in place, but not ideal	No, disagree	Don't know				

Semantic issue: conceptual variability: What are the 'necessary timeframes'? Respondents might have different interpretations

Respondent task issue: inappropriate response categories:

The statement is threefold: you are able to respond to emergencies; you adhere to the necessary timeframes; you are able to respond via internal staff etc. So, if a WSA respond that they strongly agree, with which statement have they agreed? Also, if they respond that it is in place, what is in place: the ability to respond to emergencies, the necessary timeframes or the resources and processes?

1. Water and Sanitation Services Planning		Answers							
1,1	Your appropriate water and sanitation services planning (e.g. WSDP) and associated master planning processes include and are aligned with appropriate Water and Sewage Master Plans, Spatial Development Framework (SDF), Water Safety Plans and Wastewater Risk Abatement Plans (W_2RAPs), and are aligned to your IDP and associated SDBIP targets.	Yes, appropriate water services plans are developed and include all required plans and alignment (i.e. 100%)	Yes, appropriate water services plans are developed and include all required plans and alignment (i.e. > 95%)	Yes, appropriate water services plans are developed and include all required plans and alignment (i.e. > 75%)	Yes, appropriate water services plans are developed and include all required plans and alignment (i.e. > 50%)	Plans still in development	Plan development not yet initiated	Don't know	Plans being reviewed and aligned

Structural issues: amount of information; Semantic issues; Relationship between clauses; Conceptual variability

The research team was unsure what the statements is asking:

- Do you have a WSDP? Is there any other appropriated water and sanitation services planning document?
- Is the WSDP aligned to the IDP and SDBIP targets?
- Does the WSDP include the other listed documents?
- Is the WSDP aligned to these documents?
- All of the above?

What does 'appropriate' mean?
What does it mean for the listed documents to be 'included' in the WSDP? Mentioned? Inserted as an appendix?
What does it mean for two plans or frameworks to be 'aligned'? Is there a common understanding of 'aligned'?

Respondent task issues: overlapping response categories: A ‘yes’ to the first two bullets would be 100%. How must the respondent interpret the other percentages? It does not seem to be explained in the MuSSA Guide.

Respondent task issue: Insufficient response categories

The last response (in green) was added by a respondent, indicating a need for an additional response category.

2. Management Skill Level (Technical)		Answers								
2,1	Your council approved technical management organisational organogram meets your business requirements, and key posts are filled (e.g. Technical Director, Water Services Manager, Sanitation Services Manager).	Yes, and all posts filled (i.e. 100%)	Yes, and almost all posts filled (i.e. >95%)	Yes, and most posts filled (i.e. >75%)	Yes, but only some posts filled (i.e. >50%)	Yes, but <50% of posts filled	No, does not meet business requirements	Don't know		

Respondent task issues: overlapping response categories; response categories making too fine a distinction

>95% and >75% are also >50%. It is suggested that the percentage range is given for each response category, for example 95%-98%. Also, 95% filled posts only makes sense if there are 100 or more posts to be filled. For example, if 10 posts are to be filled, only 10% (1 person), 20% (2 persons) and so forth would make sense. The alternative would be to use descriptive categories instead of percentages: all/most /about half/less than half.

2,2	You have sufficient technical management and technical support staff.	Yes, 100% as per approved organogram	Yes, strongly agree (i.e. >95% as per approved organogram)	Mostly agree (i.e. >75% as per approved organogram)	Agree somewhat (i.e. >50% as per approved organogram)	<50% as per approved organogram	None (i.e. 0% as per approved organogram)	Don't know		

Respondent task issue: Inconsistent response category; Inappropriate response category

Degree of agreement is not in all responses. What does None (0%) mean? No sufficient staff?

Logic issue: relation between statements

It is not clear how does this statement talks to the previous one. If your organogram meets business requirements, then sufficient would be a function of number of posts filled. If your organogram does not meet business requirement, you would have insufficient staff irrespective of the number of posts filled.

3. Staff Skill Levels (Technical)		Answers								
3,5	Staff regularly attend appropriate water and sanitation services skills development/training (including safety) (e.g. ESETA courses).	Quarterly (or more frequent) skills development / training	Bi-annual skills development / training	Annual skills development / training	Less frequent skills development / training (i.e. >1 year)	No skills development / training	Don't know			

Logic issue: relation between statements

The word 'staff' includes all technical employees. Respondents therefore might not see the difference between 3.5 and 2.4 (see below).

2,4	Managers and technical support staff regularly attend appropriate water and sanitation services skills development/training to support professionalisation	Quarterly (or more frequent) skills developmen t/ training	Bi-annual skills developmen t/ training	Annual skills developmen t/ training	Less frequent skills developmen t/ training (i.e. >1 year)	No skills developmen t/ training	Don't know			

4. Technical Staff Capacity (Numbers)		Answers								
4,1	Your council approved technical staff organisational organogram meets your business requirements, and posts are filled (i.e. Superintendent of WTW[16]s/WWTWs[17] and below).	Yes, and all posts filled (i.e. 100%) as per the approved organogra m	Strongly agree, and most posts filled (i.e. >95%) as per the approved organogra m	Yes, and most posts filled (i.e. >75%) as per the approved organogra m	Yes, but only some posts filled (i.e. >50%) as per the approved organogra m	Yes, but <50% of posts filled as per the approved organogra m	No, does not meet requireme nts	Don't know		

See comments on 2.1 above.

[16] Water Treatment Works
[17] Wastewater Treatment Works

5. Water Resource Management (WRM)		Answers								
5,1	The recommendations and actions from the Reconciliation Strategies (Large Systems/All Towns) have been incorporated into your WSDP, master planning and IDP processes.	Yes, strongly agree	In process	No, disagree	Don't know	Not applicable				
5,2	The metered quantity of water available from the resources is sufficient for your current WSA needs (at the stipulated level of abstraction and assurance of supply).	No shortage (i.e. sufficient water)	1 - 10% shortage	11-20% shortage	21-30% shortage	31-40% shortage	41-50% shortage	>50% shortage	Don't know	Not applicable
5,3	The metered quantity of water available from the resources is sufficient for your future WSA needs (at the stipulated level of abstraction and assurance of supply and considering possible climate change impacts) (i.e. no shortage in 10 years).	No shortage (i.e. sufficient water)	1 - 10% shortage	11-20% shortage	21-30% shortage	31-40% shortage	41-50% shortage	>50% shortage	Don't know	Not applicable

5.2 Semantic issue: semantic categories

It was not clear what the relevance of ‘metered’ is for the statement. In previous research, the research team has encountered municipalities that withdraw water from rivers without metering the volume.

What does ''assurance of supply'' refer to in this context?

5.3 Structural issue: organisation of information

The time frame of the projection is hidden in brackets at the end of the sentence and could easily be missed. Also, the timeframe is only given for no shortage; the respondent will have to infer that it also applies to the other response categories.

6. Water Conservation & Water Demand Management (WC/WDM)		Answers						
6,4	Please indicate what percentage of all connections are metered and billed (residential and non-residential (commercial, industrial, etc.)) on a monthly basis.	>98%	75% - 98%	50% - 75%	<50%	< 25%	No metering	Don't know
6,5	Your WSA is implementing appropriate intervention programmes to reduce NRW (e.g. minimisation of night flows through pressure management, removal of unlawful connections, leak detection and repairs, consumer education/awareness).	Yes, strongly agree (i.e. 100% implementation)	Mostly agree (i.e. >75% implementation)	Agree somewhat (i.e. >50% implementation)	<50% implementation	No implementation (i.e. 0%)	Don't know	

6.4 Task response issues: insufficient categories

A WSA might also charge a fixed water tariff for availability without metering consumption. This is not reflected in the response categories.

6.5: Respondent task issues: inappropriate response categories

It is not clear what the percentages refer to – percentage of programmes or the level of implementation (fully implemented versus in the process of being implemented)

5 DISCUSSION GUIDE FOR FOCUS GROUPS WITH WSA MUSSA TEAMS

1. INTRODUCTIONS
2. Tell me about your drinking water and wastewater situation.
3. What is your understanding of MuSSA? What is the purpose? PROBE TO ESTABLISH IF THEY REGARD IT AS A SELF-HELP TOOL OR AN AUDIT.
4. How would you rate the communication that you receive from DWS about the annual MuSSA completion?
   4.1. Does it give you the information you need?
   4.2. Is the tone appropriate?
   4.3. Are there any improvements that you would suggest?
5. Tell me how the MuSSA process works in your municipality
   5.1. Who receives the MuSSA letter from DWS? How does this letter reach you?
   5.2. Who are involved in the MuSSA process? PROBE IN DEPTH TO FIND OUT IF SENIOR STAFF ARE INVOLVED AND WHICH DEPARTMENTS.
   5.3. Is it a team effort around a table or an individual chain effort (fill in and send to the next in line)?
   5.4. How long does it take to fill in the MuSSA questionnaire and to send it back?
   5.5. Do you feel that you have sufficient time to complete the MuSSA questionnaire? NOTE DIFFERENCES BETWEEN DEPARTMENTS.
   5.6. Are there questions where you have to get answers from other people in the municipality? IF YES: How long does it take to get these answers?
   5.7. How would you describe the buy-in into MuSSA in your municipality? From middle management officials? From senior management? From the Council?
6. How would you rate the spreadsheet tool?
   6.1. Is spreadsheet:
      - Very easy to fill in
      - Easy to fill in
      - Difficult to fill in
      - Very difficult to fill in

      PROBE AND ASK FOR EXAMPLES IF NOT POSITIVE
   6.2. In general, how would you rate the clarity of the statements:
      - Very clear
      - Clear
      - Not very clear
      - Not clear

      PROBE AND ASK FOR EXAMPLES IF NOT POSITIVE
   6.3. In general, how would you rate the clarity of the response options?
      - Very clear
      - Clear
      - Not very clear
      - Not clear

      PROBE AND ASK FOR EXAMPLES IF NOT POSITIVE

6.4. How would you rate the comprehensiveness of the statements? Do they cover all aspects of your business?
- Too many? IF YES, what would you take out?
- Too few? IF YES, what would you add?

6.5. Have you used the new online MuSSA tool yet? IF YES, how does it compare with the spreadsheet? Any recommendations to improve the online version?

7. Could we look at few of the statements in more detail?
   7.1. How did you interpret statement C31? Which of your MuSSA responses was noted in the Risk Register? How is the Risk Register used in this municipality?
   7.2. What is ''an organogram that meets your business requirements''? Q2.1
   7.3. How did you interpret statements 2.2 and 2.3? Tell me how you answered these two statements.
   7.4. Let's have a look at the last Basic Sanitation statement (8.5):
      7.4.1. What do you understand under: 'your basic sanitation facilities'?
      7.4.2. What does it mean for your municipality to 'service a pit latrine'?
      7.4.3. Could you explain your understanding of each of the sanitation requirements? What is a sanitation facility that is environmentally safe? Structurally sound? Regularly maintained?
      7.4.4. What do the percentages (%) refer to? The percentage of households in informal settlements or rural areas where you have provided basic sanitation facilities? Or the percentage of basic sanitation facilities that meet these requirements?
      7.4.5. Tell me more about your answer.
      7.4.6. When would one select 'Not appropriate' as an answer?
      7.4.7. What do you do with the faecal sludge from VIP toilets?
   7.5. How did you interpret statements 9.3-9.5? Tell me how you answered these two statements.
   7.6. How should one interpret your answers to Q13.2, 13.3 and 13.5?
   7.7. In view of your responses, why does the report show that you are vulnerable in terms of financial asset management? Do you agree with the conclusion?

8. Once you have completed the spreadsheet/online submission, what happens then? PROBE TO FIND OUT IF THEY RECEIVE THE REPORT FROM DWS WITH THE VULNERABILITY CHART AND IF THEY DO ANYTHING FURTHER WITH IT. OR DO THEY JUST WAIT FOR NEXT YEAR TO COME WHEN THEY WILL BE ASKED AGAIN TO SUBMIT THE 2020 MuSSA?
   8.1. What do you think of the spider charts (the vulnerability charts)? For example, your 2018 spider chart, is it an accurate reflection of the situation in your municipality? If not, what is the problem, and can you give examples?
   8.2. What do you do with the spider chart (vulnerability chart)? EXPLORE IF THEY SUBMIT IT TO COUNCIL AND THE RISK REGISTER COMMITTEE.
   8.3. How useful has the spider charts been to (PROBE)
      - Improve service delivery in your municipality?
      - Meet your regulatory obligations?
      - Address water services issues in your municipality?
      - Get support from national government?
   8.4. How do you align the spider charts to your Risk Register or W_2RAP, for example? IF NO RESPONSE TO RISK REGISTER: Do you have a Risk Register? (Note: leave out if you have already explored this sufficiently in 6.2.)

9. Tell me how developed a Priority Action Plan. How are you using this plan in your municipality? How is it aligned to your IDP and WSDP as well as your Blue and Green Drop Improvement Plans?
10. How do you understand the difference between a vulnerability assessment and a risk assessment? (If uncertain of the difference) Why do you do both?
11. How is your MuSSA information used by DWS or any other Department, do you think?
12. Do you think MuSSA serves its purpose?
13. Have your MuSSA results had any negative consequences for you as individuals who have supplied the information to DWS? IF YES, PROBE IN DEPTH. How can this be addressed? IF NOT MENTIONED: Should the MuSSA results be treated as confidential? For whom?
14. What improvements to MuSSA would you suggest?
15. What is the best time of the year to do a MuSSA? (if not mentioned under 3.3)

Question for MuSSA champion only

1. Which department is the fastest to respond to the MuSSA questions? And the slowest?

Other questions

1. If it is evident that they do not use the MuSSA tool to assess and improve their performance:
    a. Which tools/instrument/software do you find the most useful to assess your own performance?
    b. Which tools do you use for planning and improvement?
2. When you have to deal with a problem like a high percentage of non-revenue water, or the deterioration of your water sources, do you ever have discussions with communities, civil society or business or agriculture? PROBE IN DEPTH

6 OECD WGIF INDICATOR STATEMENTS PHRASED AS QUESTIONS

Principles	Indicators (policy, institutions, mechanisms)
Pillar 1: Effectiveness	
Principle 1: Clear roles and responsibilities	
Existence and level of implementation of a water law	Is there a water law? What is the level of its implementation – fully, partially or not?
Existence and functioning of ministry, line ministry, central agency with core water-related responsibilities for policy making	Are there institutions (ministry, line-ministry, central agency) responsible for water policy and are they functioning?
Existence and implementation of mechanisms to review roles and responsibilities, to diagnose gaps and adjust when need be	Are there mechanisms to review roles and responsibilities and identify gaps? What is the level of implementation?
Principle 2: Appropriate scales within basin systems	
Existence and level of implementation of integrated water resources management policies and strategies	Are there integrated water resource management (IWRM) policies and strategies? What is the level of their implementation?
Existence and functioning of institutions managing water at the hydrographic scale	Are there institutions to manage water at catchment level and are they functioning?
Existence and level of implementation of co-operation mechanisms for the management of water resources across water-related users and levels of government from local to basin, regional, national and upper scales	Are there mechanisms to coordinate IWRM across levels or government? What is the level of their implementation?
Principle 3: Policy coherence	
Existence and level of implementation of cross-sectoral policies and strategies promoting policy coherence between water and key related areas, in particular environment, health, energy, agriculture, land use and spatial planning	Are there cross-sectoral policies that promote policy coherence? What is the level of their implementation?
Existence and functioning of an inter-ministerial body or institutions for horizontal co-ordination across water-related policies	Is there an inter-ministerial body or institution to coordinate water-related policies? And does it function?
Existence and level of implementation of mechanisms to review barriers to policy	Are there mechanisms to review misalignment in these policies and barriers to their

Principles	Indicators (policy, institutions, mechanisms)
coherence and/or areas where water and related practices, policies or regulations are misaligned	implementation. What is the level of their implementation?
Principle 4: Capacity	
Existence and level of implementation of hiring policies, based on a merit-based and transparent professional and recruitment process of water professionals independent from political cycles	Are there hiring policies that meet the specific criteria? What is the level of their implementation?
Existence and functioning of mechanisms to identify and address capacity gaps in water institutions	Are there mechanisms to identify and address capacity gaps in water institutions and are they functioning?
Existence and level of implementation of educational and training programmes for water professionals	Are there educational and training programmes for water professionals? What is their level of implementation?
Pillar 2: Efficiency	
Principle 5: Data and information	
Existence and functioning of updated, timely shared, consistent and comparable water information systems	Are there water information systems and are they functioning (i.e. updated, timely shared, consistent and comparable)?
Existence and functioning of public institutions, organisations and agencies in charge of producing, co-ordinating and disclosing standardised, harmonised and official water-related statistics	Are there institutions that produce statistics? Are they functioning (i.e. producing, coordinating and disclosing standardised, harmonised and official statistics)?
Existence and level of implementation of mechanisms to identify and review data gaps, overlaps and unnecessary overload	Are there mechanisms to review data gaps? What is the level of implementation?
Principle 6: Financing	
Existence and level of implementation of governance arrangements that help water institutions collect the necessary revenues to meet their mandates and drive water-sustainable and efficient behaviours	Are there governance arrangements to help water institutions to collect revenue? What is the level of implementation?
Existence and functioning of dedicated institutions in charge of collecting water revenues and allocating them at the appropriate scale	Are there institutions that collect water revenues and allocate them at appropriate scales and are they functioning?

Principles	Indicators (policy, institutions, mechanisms)
Existence and level of implementation of mechanisms to assess short-, medium-, and long-term investment and operational needs and ensure the availability and sustainability of such finance	Are there mechanisms to assess investment and operational needs and ensure funding? What is the level of implementation?
Principle 7: Regulatory frameworks	
Existence and level of implementation of a sound water management regulatory framework to foster enforcement and compliance, achieve regulatory objectives in a cost-effective way, and protect the public interest	Is there a sound water management regulatory framework? What is the level of implementation?
Existence and functioning of dedicated public institutions responsible for ensuring key regulatory functions for water services and resources management	Are there public institutions responsible for regulation and are they functioning?
Existence and level of implementation of regulatory tools to foster the quality of regulatory processes for water management at all levels	Are there regulatory tools for water management at all levels? What is the level of implementation?
Principle 8: Innovative governance	
Existence and level of implementation of policy frameworks and incentives fostering innovation in water management practices and processes	Are there policy frameworks to encourage innovative water management practices and processes? What is their level of implementation?
Existence and functioning of institutions encouraging bottom-up initiatives, dialogue and social learning as well as experimentation in water management at different levels	Are there institutions that encourage dialogue, social learning and experimentation at different levels and are they functioning?
Existence and level of implementation of knowledge and experience-sharing mechanisms to bridge the divide between science, policy and practice	Are there mechanisms to share knowledge and experience? What is the level of implementation?
Pillar 3: Trust and engagement	
Principle 9: Integrity and transparency	
Existence and level of implementation of legal and institutional frameworks (not necessarily water-specific) on integrity and transparency which also apply to water management at large	Are there legal and institutional frameworks for integrity and transparency? What is the level of implementation?

Principles	Indicators (policy, institutions, mechanisms)
Existence and functioning of independent courts (not necessarily water-specific) and supreme audit institutions that can investigate water-related infringements and safeguard the public interest	Are there court and auditing institutions to investigate infringements and are they functioning?
Existence and level of implementation of mechanisms (not necessarily water-specific) to identify potential drivers of corruption and risks in all water-related institutions at different levels, as well as other water integrity and transparency gaps	Are there mechanisms to identify drivers of corruption and gaps in this regard? What is the level of implementation?
Principle 10: Stakeholder engagement	
Existence and level of implementation of legal frameworks to engage stakeholders in the design and implementation of water-related decisions, policies and projects	Are there legal frameworks to engage stakeholders in water-related decisions? What is the level of implementation?
Existence and functioning of organisational structures and responsible authorities to engage stakeholders in water-related policies and decisions	Are there organisations and authorities responsible for engaging stakeholders and are they functioning?
Existence and level of implementation of mechanisms to diagnose and review stakeholder engagement challenges, processes and outcomes	Are there mechanisms to review stakeholder engagement challenges? What is their level of implementation?
Principle 11: Trade-offs across users, areas and generations	
Existence and level of implementation of formal provisions or legal frameworks fostering equity across water users, rural and urban areas, and generations	Are there legal frameworks to promote equity? What is the level of implementation?
Existence and functioning of an Ombudsman or institution(s) to protect water users, including vulnerable groups	Is there an Ombud to protect water users and is it functioning?
Existence and implementation of mechanisms or platforms to manage trade-offs across users, territories and/or over time in a non-discriminatory, transparent and evidence-based manner	Are there mechanisms or platforms to manage trade-offs across users and areas? What is the level of implementation? Do they function in a non-discriminatory, transparent and evidence-based manner?
Principle 12: Monitoring and evaluation	

Principles	Indicators (policy, institutions, mechanisms)
Existence and level of implementation of policy frameworks promoting regular monitoring and evaluation of water policy and governance	Are there policy frameworks promoting regular monitoring and evaluation (M&E)? What is the level of implementation?
Existence and functioning of institutions in charge of monitoring and evaluation of water policies and practices and help adjust where need be	Are there institutions in charge of monitoring and evaluation and are they functioning?
Existence and level of implementation of monitoring and evaluation mechanisms to measure to what extent water policy fulfils the intended outcomes and water governance frameworks are fit-for-purpose	Are there M&E mechanisms to measure if the intended outcomes of water policies are achieved and if the existing water governance frameworks fit this purpose? What is the level of implementation?