

# AUDIT REPORT

## Stakeholder Consultation and Communication Audit Report

### Water Quality Management Policies and Strategies for South Africa



*This report has been designed for double-sided printing*

Department of Water and Sanitation

**WATER QUALITY MANAGEMENT POLICIES AND  
STRATEGIES FOR SOUTH AFRICA**

**STAKEHOLDER CONSULTATION  
AND COMMUNICATION  
AUDIT REPORT**

**Report Number 1.6**

**P RSA 000/00/21715/8**

**JULY 2017**



**water & sanitation**

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA





Published by

The Department of Water and Sanitation  
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PRETORIA, 0001  
Republic of South Africa

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**This report should be cited as:** Department of Water and Sanitation (DWS). 2017. *Water Quality Management Policies and Strategies for South Africa. Report No. 1.6 Stakeholder Consultation and Communication Audit Report.* Water Resource Planning Systems Series, DWS Report No.: 000/00/21715/8. Pretoria, South Africa



## PREFACE

### Background

*South Africa is facing a multi-faceted water challenge, which, if not addressed effectively, has the potential to significantly limit the economic growth potential of the country, especially considering the levels of water scarcity, with frequent droughts, increasing water demands, and deteriorating resource water quality.*

*The deterioration in water quality is a factor of growing concern. Importantly, **deteriorating water quality is an economic and developmental issue**, and should be addressed as such. Without a change in how water resources are managed, worsening resource water quality will continue to erode the socio-economic benefits from, and increase the costs associated with, the use of the country's water resources.*

*In light of the above, the Department of Water and Sanitation (DWS) embarked on a journey to revise, update and consolidate its policies and strategies for managing the quality of the water in the Country's water resources and to develop a pragmatic plan for the conversion of the Integrated Water Quality Management (IWQM) Policy and Strategy into practice.*

### Integrated Water Quality Management Policy and Strategy

*Since the inception of this initiative, several supporting documents were developed that aimed to establish the status quo with respect to water quality, its management practices and instruments, the challenges in South Africa and the institutional arrangements. **A review of existing policies, strategies, and other relevant documents**, both locally and internationally was used to i) analyse the root cause of the water quality issues; ii) determine the gaps in the IWQM approaches that have been used; iii) understand impacts that emerging trends may have on water quality (e.g. climate change, unconventional gas exploration, amongst others) and iv) look for innovative practices for IWQM.*

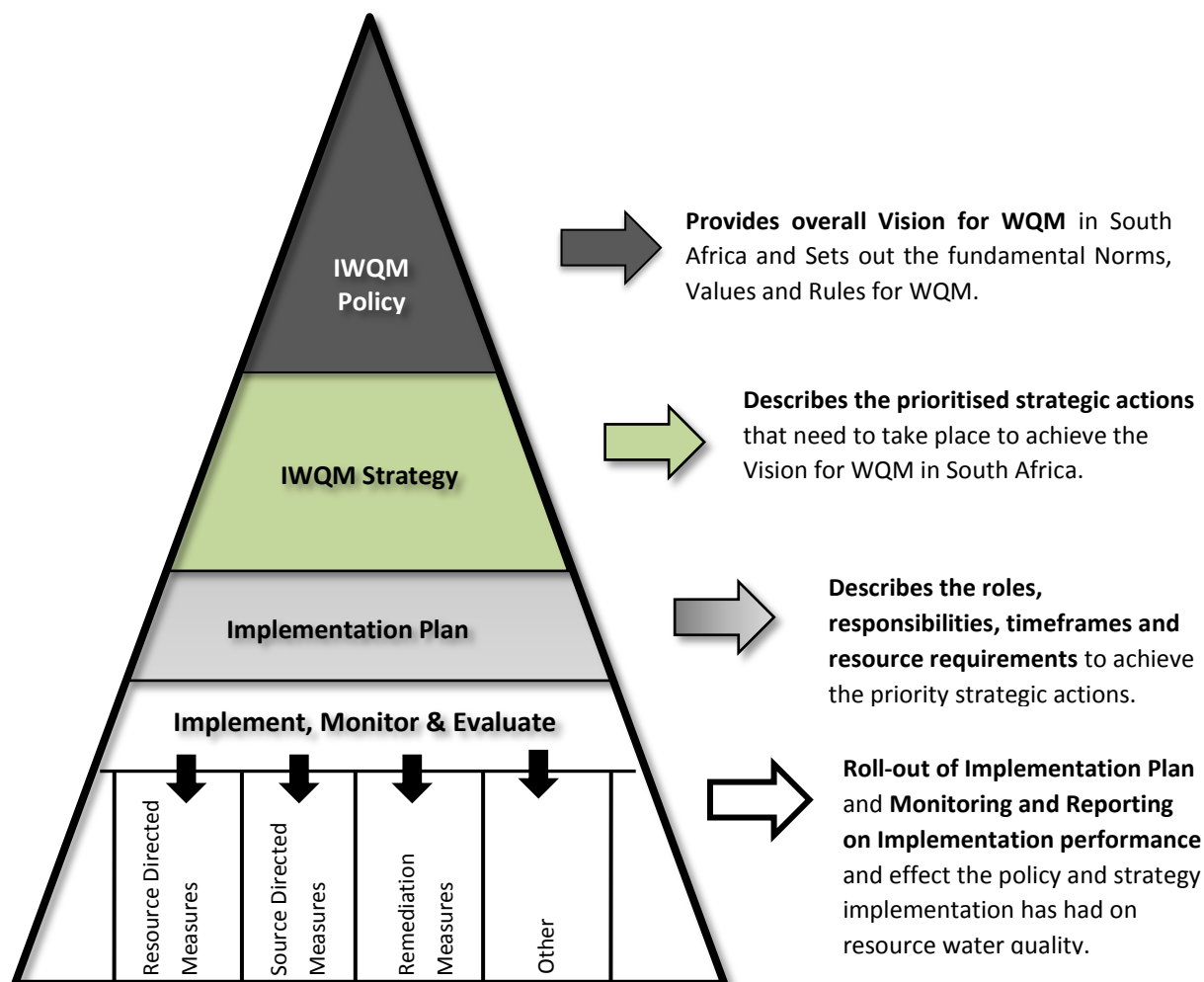
*Based on these learning's, the **IWQM Policy** sought to amalgamate and describe an integrated, inclusive and adaptive approach to IWQM, that built on the tenets of sustainable development coupled with addressing the identified gaps in the policy framework. The IWQM Policy sets out the vision, goal, values, underlying principles and policy responses for managing the quality of our water in our surface and underground water resources.*

*The **IWQM Strategy** sets out those strategic actions which are required to be undertaken in order to realise the vision and goals for water quality in South Africa. It articulates the broader process of Integrated Water Quality Management and provides the prioritised strategic actions that need to take place over a short to medium term.*

*The **Implementation Plan** outlines the pragmatic approach to implementation and clearly articulates roles and responsibilities for the implementation of key activities for the next three years and provides the linkages and dependencies between these activities.*

*The **Monitoring and Evaluation Framework** articulates the indicators to be monitored to determine the progress of the actions to be implemented and provide the foundation required*

to manage water quality adaptively. It also outlines the reporting structures and processes to be followed.



**Figure P-1: Relationship between Policy, Strategy, and Implementation**

The assessment phase of the project informed all three areas as reflected above.

### Stakeholder Engagement

Given that the management of water quality constitutes an effort that is serviced and maintained by various role-players, a key element of the development of the IWQM Policy, Strategy and Implementation Plan is the involvement of relevant role-players, at a level where they may provide strategic and operational direction in the conceptualisation and finalisation of key areas and outputs. Consequently, a Stakeholder Consultation and Communication Strategy was developed to inform, consult, involve, collaborate and where possible empower the relevant key players by providing a strategic framework to: -

- **Engage in policy and strategy development processes** of the key issues, priorities, guiding principles, and approaches regarding the IWQM Policy and Strategy.
- **Enhance the product** through inputs from stakeholders;

- **Establish Ownership and buy-in** of both the process and outcomes to ensure that stakeholders can relate and identify with the IWQM Policy and Strategy;
- **Facilitate Implementation:** a key result under this objective is the implementation of the Policy and Strategy. This will involve iterative process of learning-by-doing approach so that the implementation of the Policy and Strategy can serve as both a refining process and a learning curve;
- **Provide capacity development** and support through strategic collaborative efforts. This ensures that the necessary skills and capacities are shared between and among stakeholders;
- **Create awareness** and enhance the level of understanding on issues about the IWQM Policy and Strategy, in order to improve and strengthen active stakeholders' participation in WQM;
- **Consider appropriate mechanisms** for communication and publicising of the IWQM Policy and Strategy.

Based on the fact that IWQM has environmental and social impacts, among others, it was imperative that consultation not be a single conversation but a series of opportunities to create an understanding about WQM amongst those it will likely affect or interest, and to learn how these internal and external parties view the initiative and its associated risks, impacts, opportunities, and mitigation measures. Listening to and incorporating stakeholder concerns and feedback is highly considered as a valuable source of information that can improve the design and outcomes of policy and strategy and help identify and control external risks. It is envisaged that the consultations done during this initiative form the basis for future collaboration and partnerships.

The Stakeholder Consultation and Communication Strategy focussed internally to relevant Government Departments and externally to targeted stakeholders.

- **Internal to Government** - The purpose of targeting members within the Government Departments and its institutions (CMAs, Water Boards and other water management institutions) was to ensure that there was holistic preparation of staff at all levels. These staff have a range of interests that function at differing strategic levels within the Government and as such have different capacity building requirements.
- **External to Government** - There are a range of stakeholders that are interested and affected by the IWQM Policy, Strategy and Implementation Plan. These include the private sector, research and academia, civil society including NGOs, umbrella organisations such as the South African Local Government Association (SALGA), the South African Cities Network (SACN), the Chemical and Allied Industries Association (CAIA), Business Unity South Africa (BUSA), AgriSA, the Chamber of Mines, amongst others. The purpose of targeting these stakeholders was to solicit their input, create awareness and guide external stakeholders on water quality management issues, strengthen the understanding of the policy, and strategy and their implications, and strengthen collaborative systems. Moreover, it is important for the successful implementation of the policy and strategy that external

*stakeholders become more engaged in both developing the policy and strategy as well as through the implementation of the policy and strategy.*

## **Way Forward**

*As sector lead, the Department understands that the management of water resources requires a sector-wide approach and this is a central theme to the implementation of the National Water Resources Strategy. Similarly, the management of water quality requires a broader engagement that moves roles and relationships beyond that of user, stakeholder, Policy-maker and regulator, but towards one of cooperation, partnership and stewardship. This necessitates the development of robust and pragmatic management instruments, supported by effective communication and capacity building, both internally to the Department and externally to the larger sector.*



## DOCUMENT INDEX

### *Reports developed as part of this project:*

WATER QUALITY MANAGEMENT POLICIES AND STRATEGIES FOR SOUTH AFRICA		
REPORT SERIES	REPORT TITLE	DWS REPORT NUMBER
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1.2.1	A Review of the Water Quality Management Policies and Strategies for South Africa and International Experience	P RSA 000/00/21715/2
1.2.2	A Review of the Water Quality Management Institutional Arrangements for South Africa	P RSA 000/00/21715/3
1.2.3	A Review of the Water Quality Management Instruments for South Africa	P RSA 000/00/21715/4
1.3	Water Quality and Water Quality Management Challenges for South Africa	P RSA 000/00/21715/5
1.4	Water Quality Glossary	P RSA 000/00/21715/6
1.5	Stakeholder Consultation and Communication Strategy	P RSA 000/00/21715/7
<b>1.6</b>	<b>Stakeholder Consultation and Communication Audit Report</b>	<b>P RSA 000/00/21715/8</b>
1.7	Capacity Building Strategy	P RSA 000/00/21715/9
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1.9	Technical Close-out Report	P RSA 000/00/21715/11
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2.1	Integrated Water Quality Management Policy - Edition 1	P RSA 000/00/21715/12
2.2	Integrated Water Quality Management Policy - Edition 2	P RSA 000/00/21715/13
2.3	Summary of Integrated Water Quality Management Policy	P RSA 000/00/21715/14
<b>3. STRATEGY REPORTS</b>		
3.1	Integrated Water Quality Management Strategy - Edition 1	P RSA 000/00/21715/15
3.2	Integrated Water Quality Management Strategy - Edition 2	P RSA 000/00/21715/16
3.3	Summary of Integrated Water Quality Management Strategy	P RSA 000/00/21715/17
<b>4. POLICY INTO PRACTICE REPORTS</b>		
4.1	Implementation Plan - Edition 2	P RSA 000/00/21715/18
4.2	Implementation Plan - Edition 2	P RSA 000/00/21715/19
4.3	Monitoring and Evaluation Framework - Edition 2	P RSA 000/00/21715/20
4.4	Water Quality Management in the Department of Water and Sanitation: Organisational Design	P RSA 000/00/21715/21



## APPROVAL

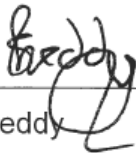
**TITLE** : Stakeholder Consultation and Communication Audit Report  
**DATE** : July 2017  
**VERSION** : Final Report  
**AUTHORS** : Ms Traci Reddy and Mr Derek Weston  
**LEAD CONSULTANT** : Pegasys Strategy and Development  
**DWS FILE NO.** : 14/15/21/3  
**DWS REPORT NO.** : P RSA 000/00/21715/8  
**FORMAT** : MS Word and PDF  
**WEB ADDRESS** : [www.dws.gov.za](http://www.dws.gov.za)

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## ACKNOWLEDGEMENTS

*The reports produced as part of this project are the culmination of various contributions from a wide range of sector representatives. The following government departments and stakeholders from the private sector, academic and research sector and from civil society are thanked for their interest and contributions (the full list of stakeholders is presented in Appendix A):*

Afred Nzo District Municipality	Department of Mineral Resources
Afri Forum	Department of National Treasury
African Rainbow Minerals	Department of Planning, Monitoring and Evaluation
Agri Eastern Cape	Department of Public Enterprises
Agri Kwa-Zulu Natal (Kwanalu Initiative)	Department of Rural Development and Land Reform
Agri Northern Kaap	Department of Science and Technology
Agri SA	Department of Tourism
Agri Western Cape	Department of Trade and Industry
Agricultural Research Council	Department of Water and Sanitation
Alliance for Water Stewardship	DH Environmental Consulting (Pty) Ltd
Amatola Water	Digby Wells
Anglo American	East Rand Water Care Company
AquaEco	Eco Monitor
ASA Metals	Eco- Owl Consulting
Association of Cementitious Material Producers	Emifula Riverine Consultants
Award	Endangered Wildlife Trust
Bloem Water	EOH Coastal and Environmental Services
Bosch Capital	Eskom
Breede-Gouritz Catchment Management Agency	Ethekwini Metropolitan Municipality
Buffalo City Metropolitan Municipality	Exova BM TRADA
Centre for Environmental Rights	Exxaro
Chamber of Mines	Federation for a Sustainable Environment
Chemical and Allied Industries' Association	Federation of Southern African Gem and Mineralogical Societies.
Chris Hani District Municipality	Fezile Dabi District Municipality
City of Cape Town Metropolitan Municipality	Frances Baard District Municipality
City of Johannesburg Metropolitan Municipality	Free State Department of Agriculture and Rural Development
City of uMhlathuze	Free State Department of Health
Clean Stream Environmental Consulting	Fresh Produce Exporters Forum
Council for Geoscience (CGS)	Freshwater Consulting cc
Council of Scientific and Industrial Research	Galago Environmental
Crocodile River Irrigation Board	Gamtoos Irrigation Board
De Beers	Gauteng Department of Health
Department of Cooperative Governance and Traditional Affairs	Geo Arc
Department of Energy	Glencore
Department of Environmental Affairs	Goadex Engineering and Water Science Consultants
Department of Health	Golder Associates
Department of Higher Education and Training	Goldfields
Department of Human Settlement	Govan Mbeki Municipality
Department of International Relations and Cooperation	Green Cape Sector Development Agency

Harmony Mines	Masilonyana Municipality
Ikamva	MBB Consulting Services
Iliso Consulting	Merafong City Local Municipality
Impala Platinum	Midvaal Water Company
Inkomati Usuthu Catchment Management Agency	Modikwa Platinum Mine
International Water Management Institute	Mogalakwena Local Municipality
iSAT	Mogalakwena Mine
Isiqalo Cooperative	Moses Kotane Local Municipality
Jaco Consulting	Mpumalanga Water Caucus
Jantech	Municipal Infrastructure Support Agent
JCP Steel	Mzimvubu -Tsitsikamma Proto-Catchment Management Agency
JG Afrika	Nala local municipality
Joe Gqabi District Municipality	Naledi Local Municipality
Johannesburg Water	Naledzi Environmental Consulting
Joint Water Forum	National African Farmers' Union
Jones & Wagener	National Business Initiative
Kaap River Irrigation Board	Nepad Business Foundation
Kakamas Water User Association	New World Water Sanitation
Komati Basin Water Authority	North West Department of Rural, Environment and Agricultural Development
Komati River Irrigation Board	North West University
Kumkani FM	Northern Cape Department of Agriculture and Land Reform
KwaDukuza Local Municipality	Northern Cape Department of Environment and Nature Conservation
Kwa-Zulu Natal Agricultural Union	Northern Cape Provincial Government
La Brie Estate	Ntuzuma Enviro Cooperative
Land bank	OR Tambo District Municipality
Lebalelo Water User Association	Orange Proto-Catchment Management Agency
Lemogang womens health	Oranje-Riet Water User Association
Lepelle Northern Water	Overstrand Municipality
Lephalale Local Municipality	Palabora Copper
Letaba Water User Association	Petra Diamonds
Letsemeng Local Municipality	Phumelela Local Municipality
Liberty NPO	Pilanesberg Platinum Mines
LIM 368 (Mookgophong LM and Modimolle LM)	Pioneer Foods
Limpopo Department of Agriculture and Rural Development	Platmines SA
Limpopo Department of Economic Development, Environment and Tourism	Polokwane Local Municipality
Limpopo Proto-Catchment Management Agency	Pongolo-Umzimkhulu Proto-Catchment Management Agency
Living Lands	PPC Cement
Lonmin	Prime Africa
Madibeng Local Municipality	Prop 5 Corporation
Magalies Water	Randwater
Makane Local Municipality	RE-Solve
Maluti Water	Rhodes University (Institute for Water Research)
Mangaung Metropolitan Municipality	Rhovan Operations
Manten Marina	Rockwell Diamonds
Marico River Conservation Association	Rowing SA



Royal Bofokeng Platinum	Umzinyathi District Municipality
Royal Haskin	University of Cape Town
Samancor Chrome Limited	University of Fort Hare
SANParks	University of Johannesburg
Sasol	University of KwaZulu-Natal
Save the Vaal	University of Pretoria
Scherman Colloty & Associates	University of the Free State
Sedibeng Water	University of Venda
SeeSaw	University of Witwatersrand
SEMBCORP Silulumanzi	Usapho Consulting
Sephaka Cement	Vaal Catchment Management Agency
Sibanye Gold	Vele Colliery
Sidebelo Platinum Mines	Vhembe Water User Associations
Softchem	Vin Pro
Source Point	Vunene Mining
South African Logal Government Association	Water Institute of South Africa
South African National Biodiversity Institute	Water Research Commission
South African Sugar Association	Western Cape Department of Agriculture
SRK Consulting	Western Cape Department of Environmental Affairs and Development Planning
Stellenbosch Municipality	Western Cape Government
Stellenbosch University	White River Valley Conservation Board
Stellvine	Wildlands
Strategic Water Partners Network	Wildlife and Environment Society of South Africa
Swartland Municipality	WineTech
T Squared Corporate Solutions	World Wildlife Fund
Tlokwe Local Municipality	Xylem Water Solutions
Tlou Consulting	
ToxSolutions	
Trans Caledon Tunnel Authority	
Transnet	
Tshegofents Facilities and Engineering	
Tshwane Local Municipality	
Tsogang Local Municipality	
TTM Water Quality Engineering	
Umfula Wempilo Consulting	
Umgeni water board	



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## LIST OF ACRONYMS

Abbreviation	Meaning
BUSA	Business Unity South Africa
CAIA	Chemical and Allied Industries Association
CMA	Catchment Management Agency
CMF	Catchment Management Forum
CMS	Catchment Management Strategy
CBO	Catchment Based Organisation
COGTA	Department of Cooperative Governance and Traditional Affairs
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
DPME	Department of Planning, Monitoring and Evaluation
DWA	Department of Water Affairs
DWAF	Department of Water Affairs and Forestry
DWS	Department of Water and Sanitation
IWQM	Integrated Water Quality Management
IWRM	Integrated Water Resource Management
KOBWA	Komati Basin Water Authority
MISA	Municipal Infrastructure Support Agent
NDP	National Development Plan
NGO	Non-Government Organisation
NEMA	National Environmental Management Act (Act No. 107 of 1998)
NWA	National Water Act (Act 36 of 1998)
ORASECOM	Orange-Senqu River Commission
PAC	Project Administration Committee
PMC	Project Management Committee
PSC	Project Steering Committee
SACN	South African Cities Network
SALGA	South African Local Government Association
WDCS	Waste Discharge Charge System
WGFD	Water for Growth and Development Framework

WMS	Water Management System
WQM	Water Quality Management
WUA	Water User Association
WWTW	Waste Water Treatment Works

## 1. INTRODUCTION

### 1.1 Background

Water Quality Management (WQM) primarily relates to the assessment of the status of the country's water resources and devising and implementing strategies and plans of various types and at various levels to ensure that the water quality of these resources meet the requirements of water users. Over the past twenty months, the Department of Water and Sanitation (DWS) has developed an Integrated Water Quality Management (IWQM) Policy and Strategy whose primary tenets are to be **inclusive, integrated, innovative and adaptive** in its approach going forward. The Implementation Plan, supported by the Monitoring and Evaluation Framework, provides a roadmap towards converting the IWQM Policy and Strategy into practice.

Stakeholder engagement in this process was imperative given the **importance of ownership and buy-in** of both the process and outcomes from the stakeholders. Furthermore, the stakeholder engagement aimed to **enhance the products and assisted in building capacity** of the stakeholders in the process. It was recognised that the success of the project lay with the **buy-in from stakeholders** at all levels as well as **keeping communication loops open and accessible**. To this end, a stakeholder consultation process was embedded in an associated Stakeholder Consultation and Communication Strategy (Report 1.5 in this series) that was informed by the different components of the project (Figure 1).

During the implementation of the stakeholder consultation and communication strategy, *the following broad groupings of the affected and interested stakeholders were identified*: internal DWS and its institutions, and external stakeholders including: 1) other government departments instrumental in IWQM implementation and support, 2) the private sector, 3) civil society and the media and 4) academia and research institutions.

Engagement and communication with these groups of stakeholders was required at various levels and within most of the project components (Figure 1). In the Inception phase (Component 1) consultation was required to obtain inputs to the project approach and goals, in Component 2, consultation was required with various specific individuals and sectors in order to obtain information on the potential gaps and challenges that need to be addressed. Focus group discussions, in addition to broad stakeholder meetings, were required during Components 3, 4, and 5 to test the draft Policy, Strategy and Implementation Plan and obtain stakeholder comment and inputs.

The stakeholder engagement strategy was needed in order to obtain inputs from a wide range of stakeholders at specific points in the project in order to achieve project outcomes. To this end, in order to create ownership of this process and the attendant outcomes at various levels, it was important that the project engaged sufficiently. It should be noted, that whilst the Stakeholder Consultation and Communication Strategy provided a much-needed framework for the engagement and communication to stakeholders, there was a certain level of flexibility that was required, as some elements were only informed during the process.

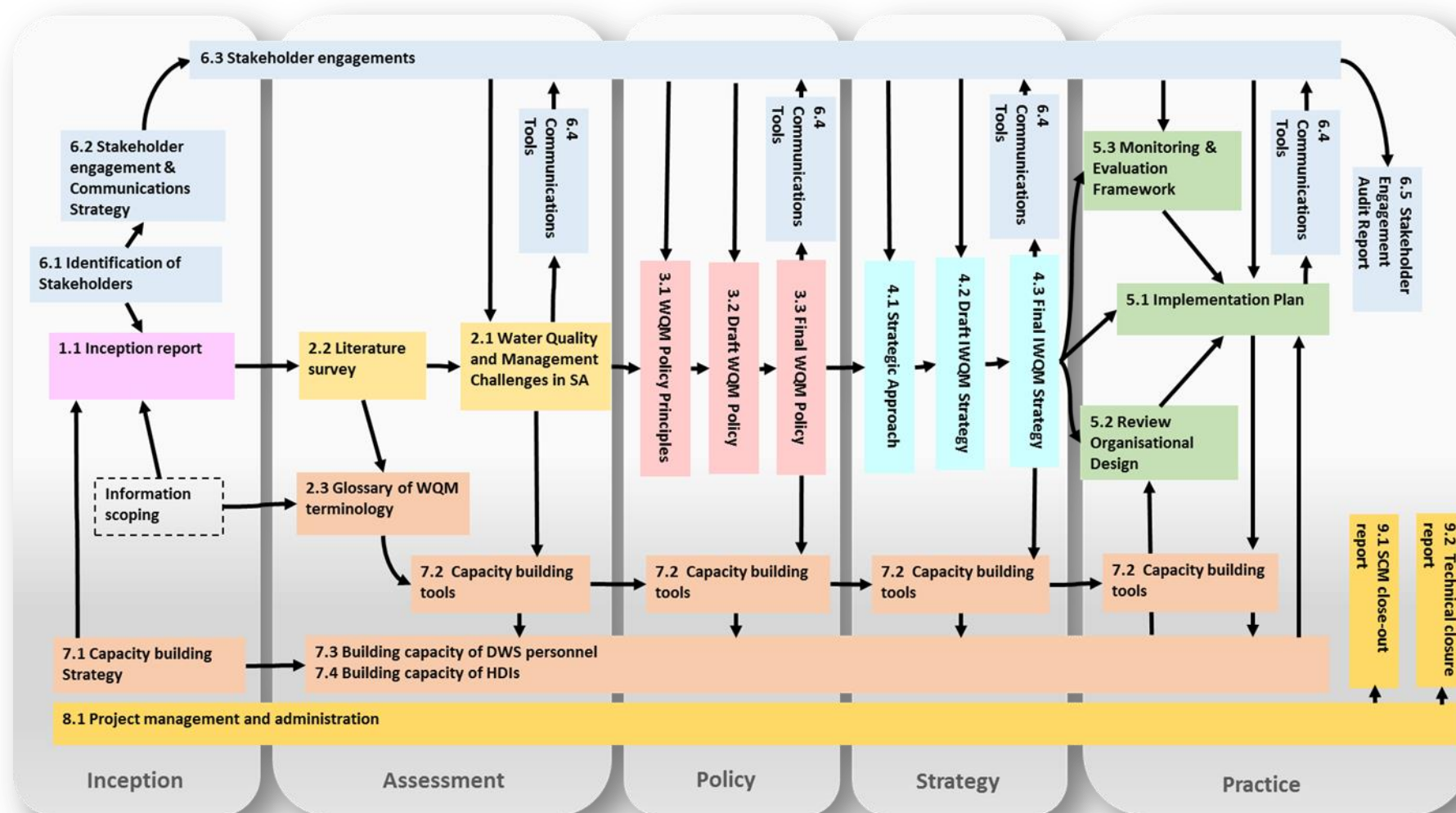


Figure 1: Project Components

## 1.2 Purpose

The Stakeholder Consultation and Communication Strategy formed an integral part of the project execution and implementation, targeting comprehensive and effective stakeholder engagement as an outcome. Stakeholder consultation and engagement in this context, focused upon enabling the participation of stakeholders through the provision of information, consultations, involvement, collaboration and empowerment whilst at the same time strengthening DWS as an institution on the key elements of IWQM Policy and Strategy towards supporting implementation. The strategy served as both a strategic document and as a reference tool. As a strategic document, it set the overall direction, objectives and scope of the stakeholder consultation and communication strategy under the project. As a reference tool, it provided a general conceptual and operational framework for stakeholder consultation and communication, including the focal areas, strategic processes and steps that may be taken.

*This Stakeholder Audit Report reflects on the implementation of the Stakeholder Consultation and Communication Strategy and highlights the lessons learned through the process in terms of the successes, gaps, and challenges and makes recommendations on how to improve future consultation and communication with stakeholders, both internal and external to the DWS.*





## 2. APPROACH TO ENGAGEMENT AND COMMUNICATION

### 2.1 Objectives for Engagement

Consistent with the need to improve water quality management in South Africa, the broad objective of the stakeholder engagement was to connect with key stakeholders and communicate with them before, during and after the process. This entailed engaging different levels within DWS staff to implement the IWQM Policy Strategy, and creating awareness amongst the greater water sector. The purpose of the Stakeholder Consultation and Communication strategy was to inform, consult, involve, collaborate and where possible empower the relevant key actors that have a role to play in the development and implementation of the IWQM Policy and Strategy, by providing a strategic framework in order to:-

- **Engage in the policy and strategy development process** by participating in the identification of the key issues, priorities, guiding principles, and approaches regarding the IWQM Policy and Strategy. This also entailed problem identification, definition and conceptualisation of IWQM tools to address problems.
- **Enhancement of the product** through inputs from stakeholders. The ultimate product was greatly improved by obtaining inputs from a wide range of stakeholders.
- **Ownership and buy-in** of both the process and outcomes to ensure that stakeholders can relate and identify with the IWQM Policy and Strategy.
- **Participation in the development of the implementation plan and facilitation of implementation** was a key result under this objective. This involved an iterative process of learning-by-doing so that the implementation of the IWQM Policy and Strategy could serve as both a refining process and a learning curve.
- **Capacity development** and support through strategic collaborative efforts ensured that the necessary skills and capacities were shared between and among stakeholders.

The above was achieved through a collaborative and participatory process through engagement with work sessions, work stream meetings and the project's governance structures such as the Project Administration Committee (PAC), the Project Management Committee (PMC) and the Project Steering Committee (PSC) that also provided vehicles to guide the consultation process.

### 2.2 Dimensions for Participation

It was crucial to have a good understanding of the project's engagements and consider what level of participation was required and desired. Several initiatives have been undertaken and various documents are available on investigations undertaken and recommendations made in

terms of stakeholder participation that can inform engagement in integrated water quality management. This section describes three dimensions of participation (Figure 2):

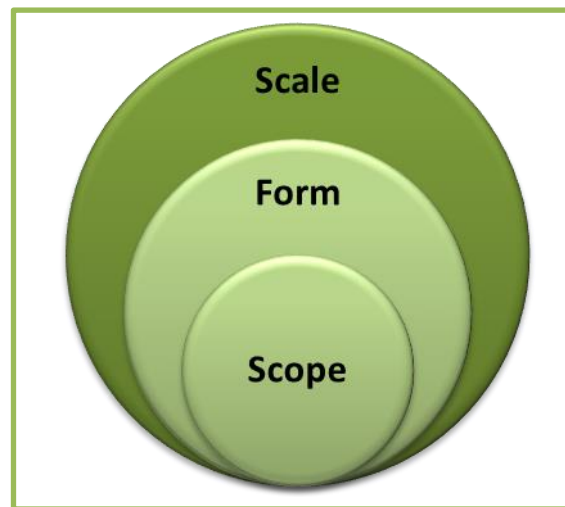


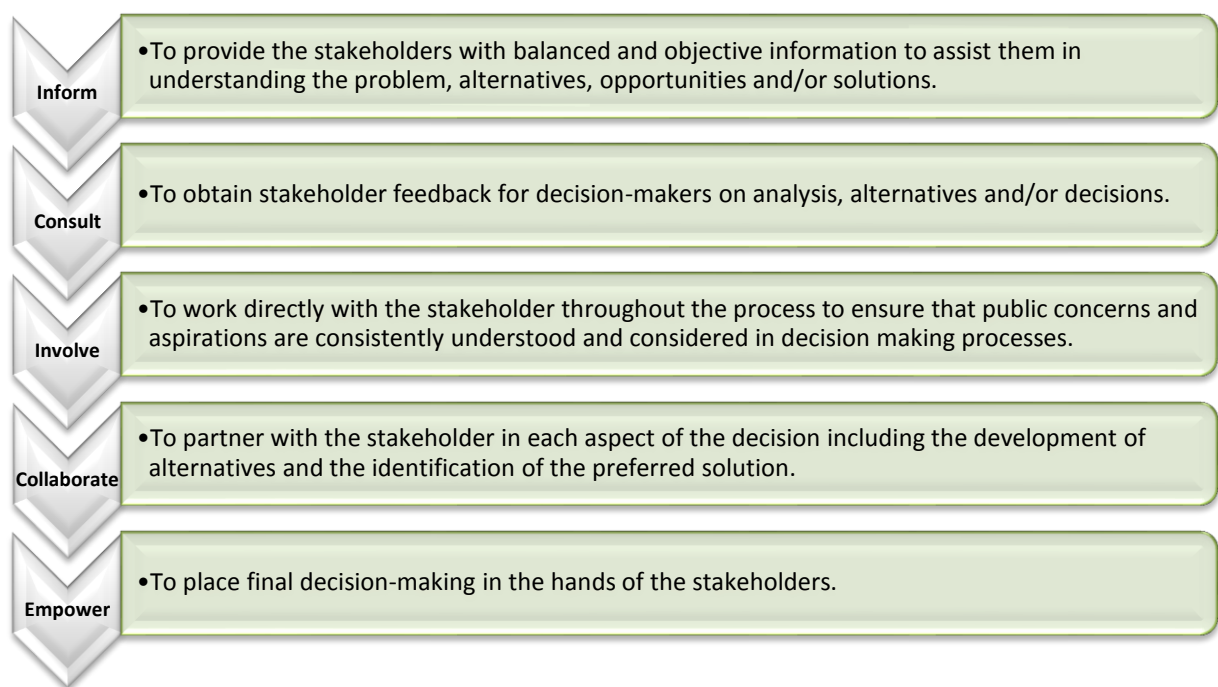
Figure 2: Dimensions of Participation

- **Scope:** Indicates the management level at which participation occurs, e.g. project, programme, or policy. In terms of **scope**, there is no 'one size fits all' solution to the scope of a WQM stakeholder participation process. Stakeholder participation in WQM core business has benefits in that it can secure support for strategic national level decisions by facilitating stakeholder input into decision making and planning associated with provincial and local (as well as sector) level issues. This enhances stakeholders' sense of ownership and buy-in into outcomes, and helps them to understand that they can make a real difference. It can also help to facilitate understanding and acceptance of decisions or plans that may initially be unpopular with some sectors of stakeholders. Notably, stakeholder participation for the IWQM will have specific requirements for stakeholder input at different levels. These participation processes would therefore be designed and conducted at a project specific level, and are essential to developing effective recommendations around IWQM.
- **Scale:** Describes the spatial level / geographic scale of the participation process ranging from local to international given that some of the rivers are shared with other countries. International guidelines indicate that a nation-wide stakeholder participation platform is ideal and provides the best opportunities for transparency and support for decision making and planning in IWQM. The national platform will be an integrated process where all the two levels (national and provincial) stakeholders will be engaged and consulted for their inputs into the IWQM Policy and Strategy development process. The national level stakeholder platforms also allow for interaction between provincial and local stakeholders. Such a scaled and integrated process will assist to encourage consensus and compromises between the stakeholders from different levels. However, adequate input from stakeholders can also be facilitated at national level within each Province if feedback mechanisms are effective. The most critical aspect of this approach of participation is however ensuring that the real felt needs of stakeholders

are correctly represented and documented. It is essential that national level stakeholder participation processes are effective and incorporate feedback processes to ensure that the contributions of stakeholders are accurately and consistently communicated at all levels.

- **Form:** Describes public participation spectrum developed by the International Association for Public Participation. The spectrum includes five levels of participation indicating the flow and use of information, escalating the level of public impact, i.e. inform - consult – involve - collaborate - empower. These categories are explained in further detail in Table 1. It is ideally and practically desirable to have a progressive approach to stakeholder participation, progressing to collaboration and co-management in the long term as capacities are developed and power relations between stakeholder groups and across levels become balanced. The form of stakeholder participation in the WQM project will range from inform to empower.

Stakeholder participation, through engagement, can be broadly categorised into five form elements as illustrated in the figure below.



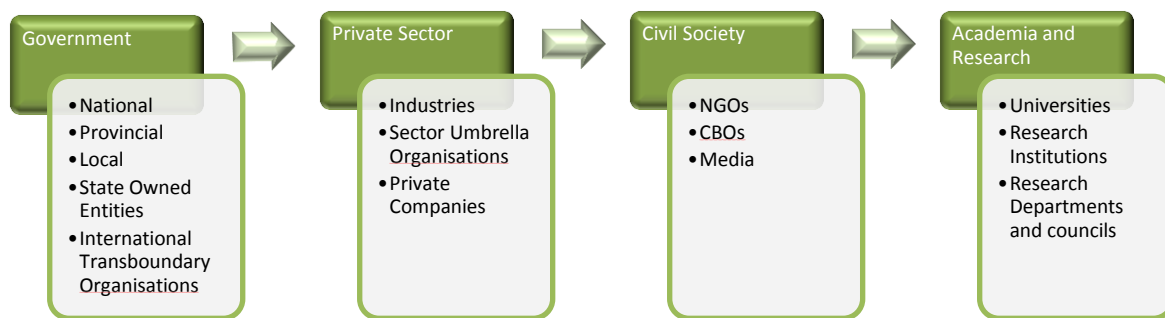
**Figure 3: Key elements of stakeholder engagement**

## 2.3 Stakeholder Identification and Categorisation

The identification of stakeholders was critical given that before beginning a stakeholder consultation process, it was useful to think about who to consult, over what topics, and for what purpose. As with this project, there were multiple stakeholder groups and issues, with time and budgetary constraints, it was important to prepare a plan to ensure maximum inputs from the engagements, noting that not everyone can be consulted or physically engaged with.

These stakeholder groupings importantly provided a platform to allow for targeted communication and engagement plans that could specifically address the unique requirements of each of the groups.

Noting the key tenets of the IWQM Policy is an integrated and inclusive approach, stakeholders were delineated into the four main categories which are Government, Private Sector, Civil Society and Academia/Research (Figure 4).



**Figure 4: Categories of Stakeholders**

These four main categories are divided into a number of sub-categories and Table 1 gives the descriptions for these.

**Table 1: Description of Categories**

Category	Sub-category	Description
Government	<b>Department of Water and Sanitation</b>	<ul style="list-style-type: none"> <li>▪ As the custodian of the country's water resources, the Department of Water and Sanitation is a <b>key stakeholder</b>, given their role in developing and Implementing policies and strategies related to IWQM.</li> <li>▪ This includes staff members of the DWS and its institutions, including catchment management agencies, water user associations and regional utilities.</li> </ul>
	<b>Implementation support partners and Government Sector Departments</b>	<ul style="list-style-type: none"> <li>▪ Sector departments are key enablers and key implementation support partners of policies and strategies related to IWQM.</li> <li>▪ These include the National (and provincial where relevant) Departments of Mineral Resources, Environmental Affairs, Agriculture, Forestry and Fisheries, Health, Treasury, Human Settlements, Tourism, Cooperative Governance and Traditional Affairs, Education, Science and Technology, International Relations, Public Enterprises and Planning, Monitoring and Evaluation and the various municipalities that make up South Africa's local government.</li> </ul>

Category	Sub-category	Description
		<ul style="list-style-type: none"> <li>Although it is an association, this stakeholder group includes representatives from the South African Local Government Association. SALGA is an autonomous association of all 257 South African local governments and represents the interests of local government within the system of government as a whole. They support their members to fulfil their developmental obligations, are an active participant in the intergovernmental relations system, provide common policy positions on numerous issues and voice local government interests, as well as provide solutions to the challenges facing local government more generally.</li> <li>Similarly, the Municipal Infrastructure Support Agent (MISA) which is responsible for providing support and developing technical capacity towards sustained accelerated municipal infrastructure and service delivery is included in this stakeholder group.</li> </ul>
	<b>International Transboundary Organisations</b>	<ul style="list-style-type: none"> <li>South Africa shares its water resources with a number of its neighbouring states and as such transboundary organisations which oversee the bi-lateral agreements between the South African Government and its neighbours are included as important stakeholders. This includes for example, the Komati Basin Water Authority (KOBWA), and the Orange-Senqu River Commission (ORASECOM), amongst others.</li> </ul>
<b>Private Sector</b>	<b>Industries</b>	<ul style="list-style-type: none"> <li>These relate to the industries that impact and are impacted by water quality such as: <ul style="list-style-type: none"> <li>Manufacturing (Woolworths, Unilever, amongst others)</li> <li>Mining and power generation (Exxaro, Eskom, Anglo Platinum, amongst others)</li> <li>Petrochemical (Sasol, amongst others)</li> <li>Agriculture (Farmers)</li> </ul> </li> </ul>
	<b>Water sector partners and umbrella organisations</b>	<ul style="list-style-type: none"> <li>These are professional, resident and business associations and include: the Strategic Water Partners Network, the Chamber of Mines, the Joint Water Forum, the Water Institute of South Africa, and the South African agricultural industry associations, amongst others.</li> </ul>
	<b>Private Companies</b>	<ul style="list-style-type: none"> <li>Consulting (SRK, Iliso, Golder Associates, Scherman Colloty and Associates, amongst others)</li> </ul>
<b>Civil Society</b>	<b>Non-Governmental Organisations (NGOs)</b>	<ul style="list-style-type: none"> <li>Civil society and interest groups provide a local platform for interests of communities and the environment.</li> <li>These include Federation for Sustainable Development, Save the Vaal and the Centre for Environmental Rights, amongst others.</li> </ul>

Category	Sub-category	Description
	<b>Catchment Based Organisations</b>	<ul style="list-style-type: none"> <li>These include catchment management forums, catchment committees, amongst others.</li> </ul>
	<b>Media</b>	<ul style="list-style-type: none"> <li>These assist as information and knowledge distribution moderators and platforms.</li> <li>Media gatekeepers (Journalists, editors, executives, and program directors).</li> </ul>
<b>Academia and Research</b>	<b>Universities</b>	<ul style="list-style-type: none"> <li>These provide much needed critical thoughts and innovative ideas as knowledge creators and researchers.</li> <li>These include academic institutions (including various tertiary institutions), the Water Research Commission (WRC), the Council for Scientific and Industrial Research (CSIR), the Agricultural Research Commission (ARC), the South African National Biodiversity Institute (SANBI), the Council for Geoscience, the Medical Health Research Centre (MHRC), and the Department of Science and Technology (DST).</li> </ul>
	<b>Research Institutions</b>	
	<b>Research Departments and Councils</b>	

**Note: a full list of stakeholders per category is presented in Appendix C.**

## 2.4 Elements for Engagement

At the Inception stage, the team identified differing levels of engagement ranging from information sharing and awareness; data gathering and inputs; consultation for consensus; and capacity building; to achieving buy-in and support; identify issues and gaps; and considering issues of cooperative governance. Consequently, it becomes necessary to outline the key elements that were essential for the planning and delivery of a successful stakeholder consultation and communication strategy. The essential elements included budget, timeline, methods, organisational logistics and a communication strategy as outlined in Figure 5.



Figure 5: The five elements of engagement

These five elements are elaborated below.

### 2.4.1 Budget

The first consideration related to **budget**. A total of R 2 486 549 (inclusive of VAT) was allocated for the Stakeholder Consultation and Communication Component of the project. This budget was split into five key tasks (with sub-tasks) as outlined in Table 2.

These budgets also included time for staff who needed to be involved in product delivery. The allocated budget here covered everything besides the costs of stakeholders' travel to meetings/workshops.

It should be noted, that this project was invoiced on a deliverable-basis. All allocated budgets for tasks and sub-tasks that were completed to date have been invoiced and paid. Therefore, the budget allocated and budget spent for stakeholder engagement and communication matched.



**Table 2: Breakdown of budget for Stakeholder Consultation and Communication**

<b>STAKEHOLDER CONSULTATION AND COMMUNICATION</b>	<b>R 2 486 549</b>
<i>Workshops and Focus Group Meetings for WQM Challenges, Policy, Strategy, and Implementation Plan Development</i>	<b>R 286 132</b>
<b>Task 6.1: Identification of the Stakeholder Groups</b>	<b>R 87 100</b>
<i>Deliverable 6a: Note on the stakeholder groups</i>	
<b>Task 6.2: Stakeholder Consultation and Communication Strategy</b>	<b>R 184 000</b>
<i>Deliverable 6b: Stakeholder Communication Strategy</i>	
<b>Task 6.3: Stakeholder Engagements</b>	<b>R 1 286 486</b>
<i>Deliverable 6c: Provincial Roadshow 1</i>	
<i>Deliverable 6d: Provincial Roadshow 2</i>	
<i>Deliverable 6e: Provincial Roadshow 3</i>	
<i>Deliverable 6f: Provincial Roadshow 4</i>	
<i>Deliverable 6g: Provincial Roadshow 5</i>	
<i>Deliverable 6h: Provincial Roadshow 6</i>	
<i>Deliverable 6i: Provincial Roadshow 7</i>	
<i>Deliverable 6j: Provincial Roadshow 8</i>	
<i>Deliverable 6k: Provincial Roadshow 9</i>	
<i>Deliverable 6l: National Workshop</i>	
<i>Deliverable 6m: WQM Symposium</i>	
<i>On-going stakeholder engagement</i>	
<b>Task 6.4: Communication Tools</b>	<b>R 555 631</b>
<i>Deliverable 6n: Newsletter 1 - WQM Status Quo</i>	
<i>Deliverable 6o: Newsletter 2 - Policy</i>	
<i>Deliverable 6p: Newsletter 3 - Strategy</i>	
<i>Deliverable 6q: Newsletter 4 - Implementation, M&amp;E</i>	
<i>Deliverable 6r: Project Information Management Database</i>	
<i>Deliverable 6s: IWQM web page</i>	
<i>Deliverable 6t: DWS IWQM Banners</i>	
<i>Deliverable 3d: Summary of WQM Policy</i>	
<i>Deliverable 3e: WQM Policy Brochure</i>	
<i>Deliverable 4d: Summary of IWQMS</i>	
<i>Deliverable 4e: IWQMS Brochure</i>	
<i>Deliverable 5g: Concept Work Plans</i>	
<i>on-going printing costs</i>	
<b>Task 6.5: Stakeholder Engagement Audit Report</b>	<b>R 87 200</b>
<i>Deliverable 6u: Stakeholder Audit Report and Database</i>	

## 2.4.2 Timeline

The second consideration was related to **timeline**. The project timeframe was 24 months, and Inception kicked off in October 2015. Consideration was given to the time required to plan activities and events, obtaining signoff from either project governance structures and/or other structures within the DWS, and time required for the relevant people to get involved. Consideration was also given to the time needed between events for work to be completed and to be taken to the next stage. The timeline set out key dates and actions including when final decisions need to be taken, and by whom. A project Gantt chart and stakeholder engagement scheduled was developed as part of the project and presented in the



Stakeholder Consultation and Communication Strategy. However, occasional adjustments to the dates were made as the project proceeded in order to adequately incorporate inputs, obtain the necessary approvals and accommodate the availability of key participants, amongst other reasons. These timelines were discussed and agreed at the PAC meetings.

### 2.4.3 Method of engagement

The third aspect related to **method of engagement**. The stakeholder groups were dictated by the objectives of the project engagement. Therefore, stakeholders were invited based on their ability to inform the development of the products, within the constraints of time and budget.

The following platforms were used:

#### Project Governance Committees

In terms of project management and governance, the Project Administrative Committee (PAC), the Project Steering Committee (PSC) and the Project Management Committee (PMC) were the main project governance structures. Representatives from each respective institution were selected from the line functions that are responsible for WQM. The key structures and their broad functions included:

- The PAC – Monthly engagements were held. These meetings were largely responsible for the day-to-day management of the project. A DWS team which included the Project Manager, the Deputy Project Manager and Project Coordinator supported this process.
- The PMC – Quarterly engagements were held. These meetings were responsible for functional, technical and operational guidance and input. The PAC members, as well as the Directors and Deputy Directors of the line functions in DWS and CMAs that were either directly involved or supported WQM comprised this committee.
- The PSC – Engagements at key inflection points were held. This committee was responsible for providing strategic guidance and direction. The PAC members, Chief Directors of DWS line functions that were either directly involved or supported WQM and representatives from other government departments, CMAs and Water Boards comprised this committee.

**Scope:** Manage and strategically guide the project

**Scale:** National and Provincial Government

**Form:** Inform, Consult, Involve, Collaborate and Empower

#### Product Development Workshops

Targeted engagements were held with key stakeholders that were instrumental in aiding the development and implementation of IWQM. The workshops were primarily meant to appraise, sensitise, obtain feedback and give direction on key policy, strategy and implementation

challenges from a selected range of stakeholders from Government, Private Sector, Civil Society and Academia and Research. There were three workshops held at key points in the project programme, viz. the identification of the WQM challenges, the development of the IWQM policy and the development of the IWQM Strategy. These workshops were aligned to the project programme. Inputs to the Implementation Plan were obtained through the Provincial Roadshow workshops and WQM Symposium (see below).

**Scope:** Provide inputs into the project products

**Scale:** Range of stakeholders from Government, Private Sector and Civil Society

**Form:** Inform, Consult and Involve

### Provincial Roadshows

The nine events at provincial level (one in each province) provided a platform for reaching a large and diverse audience, as both DWS staff as well as external stakeholders were encouraged to participate. At these sessions, the engagement with more localised stakeholders such as representatives from Catchment Management Forums, provincial and national sector departments (DMR, DEA, DoH, DAFF, NT etc.), Non-Governmental Organisations, Community Based Organisations, research institutions, private sector organisations, academia and ward Councillors played a crucial role. The DWS provincial offices assisted in sharing their stakeholders lists so that the right stakeholders were invited to the workshops.

It is important to note that these events created the necessary platform for stakeholders to share, inform and comment on the IWQM Policy and Strategy in terms of both the contents of the policy and strategy and the considerations and actions that would be needed for its implementation. As highlighted elsewhere in this report, all inputs and ideas were recorded, and the inputs were consolidated and the project team used its discretion in reflecting these inputs in the final documentation. The discussions held at the provincial road shows largely focused on the impact of IWQM policies and strategies and implications for implementation.

**Scope:** To create awareness on the Policy and provide inputs to the formulation of the IWQM Strategy

**Scale:** National and Provincial Government (where necessary)

**Form:** Inform, Consult, and Involve

### Inter-Departmental Workshop

The one-day Inter-Departmental workshop was aimed at other government departments in order to solicit inputs and comments on the IWQM Policy and Strategy. The workshop acted as a ground-truthing confirmatory process to discuss the inputs captured through other avenues as outlined above. The workshop also served as a platform for other Departments to highlight their initiatives in combatting poor water quality. The Departments targeted to

participate in the workshop were those sector Departments that directly impact on water quality, such as Mining, Agriculture etc, and those Departments that are impacted negatively by having to absorb the costs/impacts from poor water quality, such as the Departments of Tourism, Health, and Environmental Affairs, amongst others.

**Scope:** Create awareness on the policy and strategy, solicit inputs and formulate ties for future collaborations

**Scale:** National Government Departments

**Form:** Inform, Consult, Involve and Collaborate

### National Symposium

The National IWQM Symposium was convened to discuss and provide key lessons and implications for the roll-out of the policy and strategy. This was an information sharing session that provided the platform for strategic input by targeted stakeholders to convene, discuss and consolidate the key policy and strategy outcomes of the consultation process with the view of synthesizing implications for implementation. The symposium provided an opportunity to collaborate with other entities from Government, such as National Treasury, Academia, Civil society and Private Sector, amongst others.

**Scope:** Create awareness and share innovative ideas on implementation

**Scale:** National Stakeholders

**Form:** Inform, Consult, Involve and Collaborate

### Focus Groups

The focus group meetings and one-to-one sessions were needs-based. The necessity for focus group meetings became evident for each project phase once other platforms had first been used (such as targeted workshops and project governance meetings). This mode of engagement included issue-driven or sector-specific focus groups or targeted one-to-one engagement with specific attention on getting the required inputs/details. Targeted DWS staff were key role players. The overall expected result was general engagement, consultation and awareness of the Policy and Strategy and its implementation.

**Scope:** Bridge gaps identified during the project roll-out

**Scale:** National and Provincial Government (where necessary)

**Form:** Inform and Consult

### Other Engagement avenues

Engagement with stakeholders was also realised through other opportunistic avenues. Some of these platforms included WISA, WRC water dialogues and Catchment Management

Forums, among others. This also included other internal platforms available, for instance through the DWS website, media articles and the distribution of project content, such as Newsletters, to registered stakeholders on the database.

**Scope:** Create Awareness  
**Scale:** National Stakeholders  
**Form:** Inform

#### 2.4.4 Organisational Logistics

The fourth aspect related to **organisational logistics**. By their nature, participatory processes require many practical arrangements, especially in terms of user-friendly briefing materials and suitable venues.

For the broader consultations, the Protea Hotel Centurion and Burgers Park Hotel were used, both having easy access and parking. For DWS-only meetings a number of their internal venues were used, such as the Roodeplaat Training Centre and other boardrooms available at the DWS buildings. The venues for the Provincial Roadshows were selected in consultation with the Provincial representatives that supported the planning of the roadshows.

For smaller meetings, Pegasys and Aurecon venues were used.

Meetings were held during normal office hours, and therefore created no undue burden on attendees. All presentations were made available to attendees and, where necessary, discussion documents, were distributed beforehand to aid in preparing the attendees for the planned discussions.

#### 2.4.5 Communication Strategy

The final key aspect of the engagement process was the **communication strategy**. It is undeniable that communication was important throughout the engagement process, especially given that IWQM does not sit only at national level but provincial and local levels and with other sectors that affect water quality but also rely on good water quality. Given this background, it became essential to create awareness to get the level of cooperation required to produce a good policy and strategy.

*The expected outcomes were:*

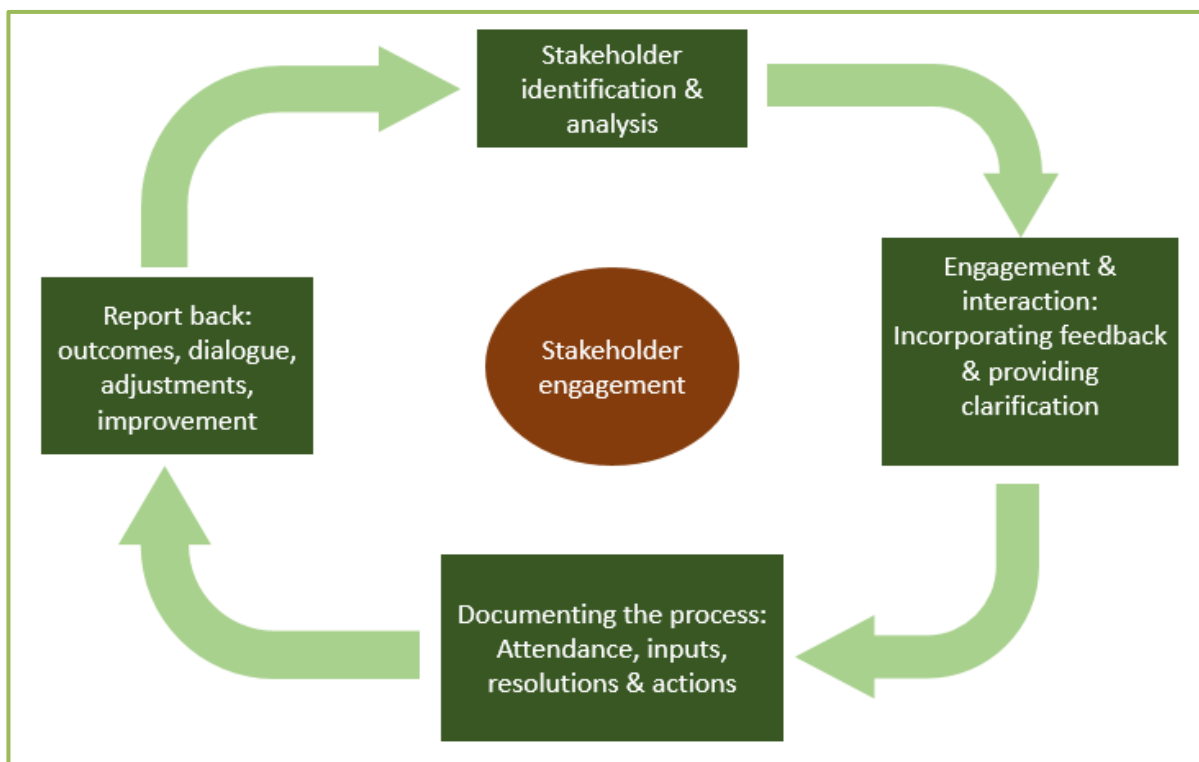
- Increased awareness of WQM Policy and WQM Strategy and their roles or objectives,
- WQM institutions are visible, credible and financially sustainable to carry the work of water quality management in all nine water management areas,
- Increased consultation and dialogue between DWS and sector partners, and
- Institutionalised culture and practice of 2-way communication.

To ensure relevant coverage for the project, the following communication mechanisms were envisaged: Ministerial launch; direct communication; print media; electronic media; outreach; and regional workshops. These are elaborated below:

- ✚ **Ministerial Launch** - The Launch should be scheduled to take place as a key event, where the Minister will make an announcement to the Nation in the presence of the Water Sector Departments and other stakeholders. The theme for the launch will be on WQM.
- ✚ **Direct** - Communications will be effected by direct contact with stakeholders via meetings and workshops. In this regard, capacity building or knowledge sharing sessions should be planned towards the end of the project to disseminate the information generated in the project.
- ✚ **DWS IWQMS Project Website** - The IWQMS Project website, which sits on the Departmental website, is a public platform to share the project progress and finalised products. The website will be updated on a continuous basis so that it serves as both an information repository for awareness creation as well as an engagement tool for updates on project progress.
- ✚ **Print Media** - Print media will be utilised through both national and local newspapers, to develop awareness to a wider range of stakeholders. The following print media will be employed:
  - An information fact sheet about the WQM project will be printed and made available to all delegates attending the various forums
  - Information articles will be written for various DWS publications that include Shotha, DWS Speaks and Hlathi Manzi.
- ✚ **Electronic Media** - The following electronic media will be employed:
  - Notices and information about the project will be posted on the DWS Intranet via the DWS Project Manager;
  - Notices and information about the project will be posted on a webpage dedicated to the project on the DWS Website; and
  - Notices and reminders about project meetings and workshops will also be shared via webmail using a consolidated mailing address for those who have access to internet.
- ✚ **Provincial Workshops** - The workshops will provide the platform for formal engagement with the Department where all provincial stakeholders will be represented. Such workshops will be held nationally at a provincial level and stakeholder lists will be sourced from the DWS provincial offices. Other existing structures will be considered as well and the DWS Provincial Offices will provide guidance.

## 2.5 Stakeholder Engagement Roadmap

The iterative nature of the consultation process is essential. Regardless of what stage of the project consultation is taking place, the basic steps in the process will essentially remain the same and can be repeated as needed over the life of the project. There are five basic steps that entail stakeholder consultation and engagement processes. These include identifying stakeholders, consulting using basic principles, incorporating feedback, documenting the process, and reporting back. These steps are critical and there should be consistency in how they are applied in this project. Figure 3 below depicts the necessary steps required for strategic consultations with stakeholders.



**Figure 6: Critical steps for stakeholder consultation**

The Stakeholder Consultation and Communication Strategy outlined a 3-phase approach (Figure 7) to develop the final products associated with the policy, strategy and converting policy to practice.



**Figure 7: Development process for the key project reports**

Note that the project aimed to develop the IWQM policy up to the phase where it would be “gazette ready”. In other words, the project and stakeholder engagements listed herein resulted in the development of the second edition of the Policy. This edition will be taken further through a process of gazetting (for public comment), to produce a third and final edition. The IWQM Strategy will be used as an input to the third edition of the National Water Resource Strategy, and in this way, will also be gazetted.



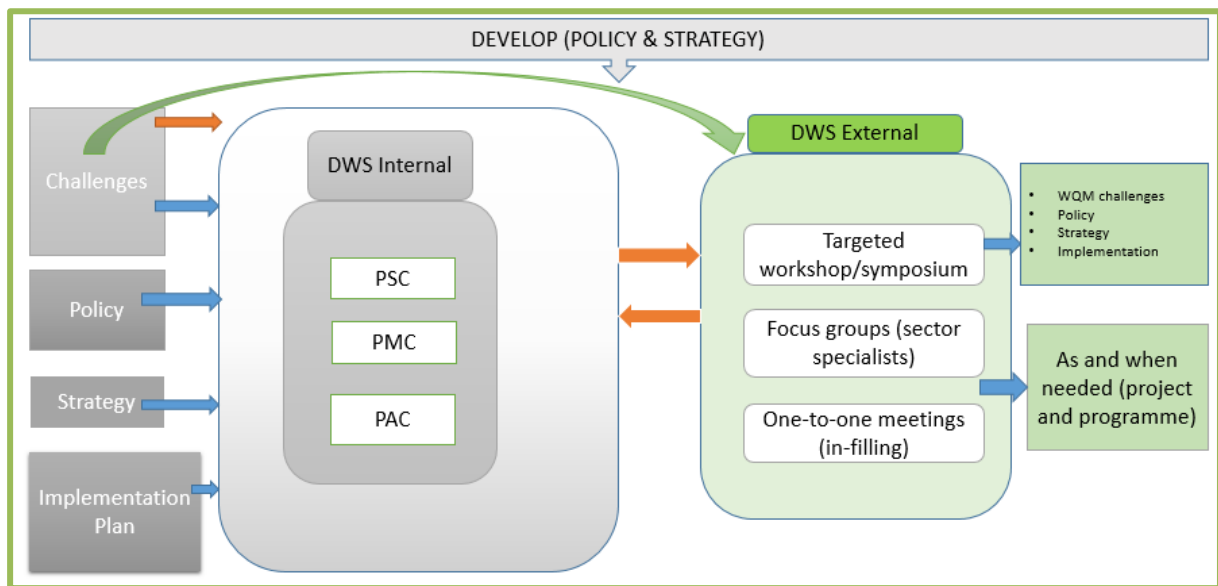


Figure 8: Development of the IWQM Policy, Strategy and Implementation

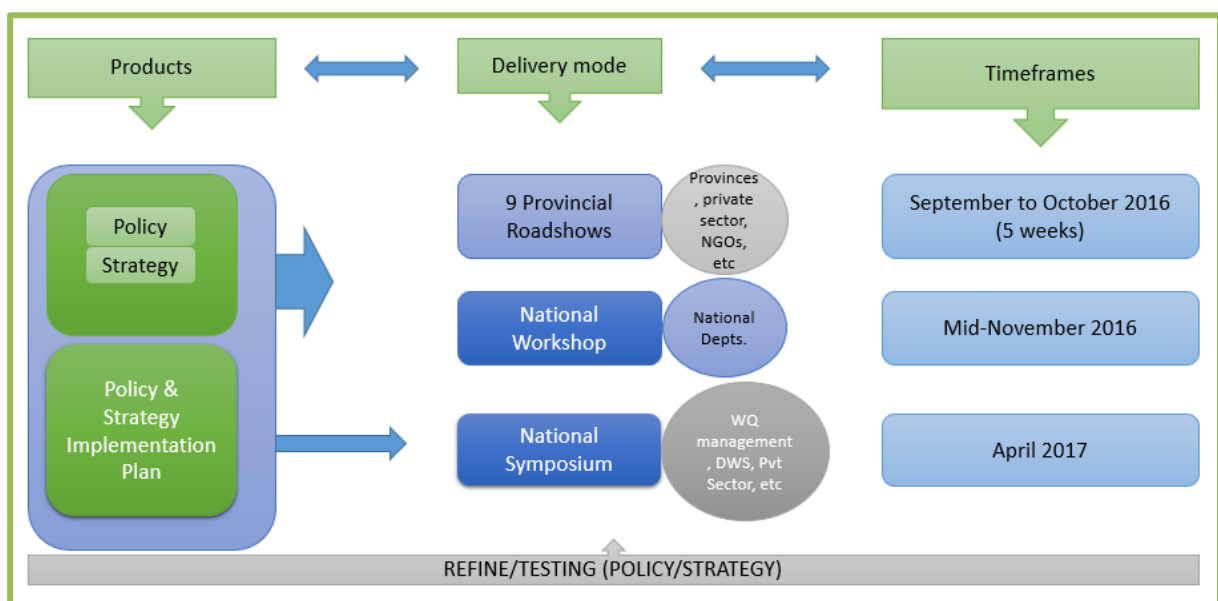


Figure 9: Testing/truthing the IWQM Policy, Strategy and Implementation

Whilst every effort was made to stick to the proposed dates, the complexity and diversity of the engagement required for this project resulted in slight amendments. These changes were communicated with the targeted stakeholders.



### 3. ENGAGEMENT AUDIT

The IWQM Strategy was a project initiated in October 2015. The project terms of reference required an integrated Policy, Strategy and Implementation plan to be developed and was called for in response to the need to address the various water quality challenges that were emerging around the Country (as highlighted in the NWRS-2). The need for this project further stemmed from a recognition from the Department of Water and Sanitation that water quality is a critical issue and whilst there were previous policies and strategies in place, the approach to water quality management (WQM) was very fragmented. This new policy and strategy would call for a more integrated and consolidated approach.

Part of the project required provincial workshops to be held in order to obtain a better understanding of the water quality and WQM issues being experienced. Noting that the water quality status of water resources across the country are in decline, and a revised approach was needed, it was essential to have key targeted engagements that would enable a more technically detailed discourse. This was then not a public participation exercise but was rather focused on obtaining inputs from as wide a range of stakeholders as possible.

There has been some frustration around the stakeholder engagement process, with the main concern being that local communities had not been consulted, however, given the nature of the project, budget and timeframes in which to complete the work, the process had to be streamlined to ensure that inputs from targeted stakeholders were obtained. This included stakeholders from a range of sectors that included the public sector, private sector as well as representation from civil society and from the relevant government departments. Stakeholders were identified based on all available lists at the department and on knowledge of the potential stakeholders whose mandates and interests may be influenced by, or who may influence WQM in the Country. To allow for broader involvement, and for those who wished to become a stakeholder and receive the updates/newsletters etc. that were developed as part of the project, an option to register as a stakeholder was also placed on the DWS Website.

Part of the project was to develop a Stakeholder Consultation and Communication Strategy. Whilst not everyone could be invited to the meetings the representatives of the various stakeholder groups that did attend were encouraged to spread the word within their organisations and disseminate materials that were available. The various project documents were also made available on the DWS website, and there is a registration page for those. In order to extend consultations DWS staff furthermore presented on the progress of the project and outcomes of the project tasks at various catchment management forums.

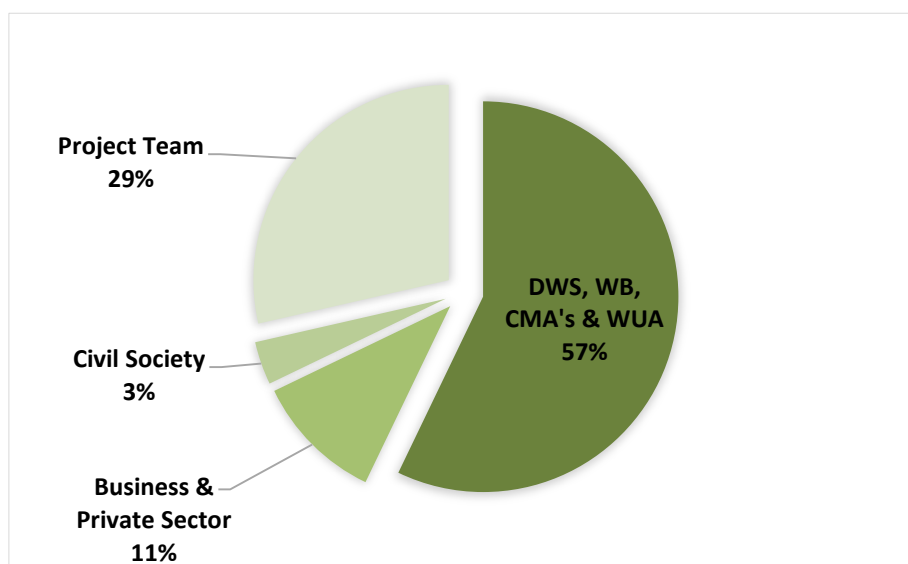
During the development of the Policy in 2016/17, it was requested that the Policy be approved by cabinet and be gazetted. This translated into a legal mandate for public consultation in which DWS: Policy Chief Directorate is taking the lead and will be gazetting the Policy. This has been happening in parallel to the project with the IWQM Policy being

earmarked for gazetting for public comment late 2017/early 2018. This will provide the broader public with the opportunity to give their inputs into the IWQM Policy.

*Presented below is a reflection of the stakeholders' engagements that were held during the project. A full list of engagements is presented in Appendix B. It should be noted that the project team were represented by members of the PSP and DWS project team and are reflected separately in the statistics presented in this section.*

### 3.1 Situation Assessment Phase

The Situation Assessment Phase, which consisted predominantly of a literature review and an assessment of the water quality and water quality management challenges in the Country followed the development and testing processes as outlined in Figure 8 and Figure 9 above. 147 stakeholders were invited to the WQM Challenges workshop, which was held on 17 February 2016. Out of the stakeholders that were invited 20 stakeholders attended, excluding the project team. The workshop had representation from DWS, the business and private sector, civil society and academia (Figure 10). The findings from the updated reports were thereafter presented at the Provincial Workshops and at a number of the catchment forums, for further inputs. A newspaper article on some of the key aspects of the workshop was also published through the New Age newspaper on 22 February 2016 by DWS Communications entitled *"If the cap fits – Improve our Water Quality"*.



**Figure 10: Attendance statistics for WQM Challenges Workshop**

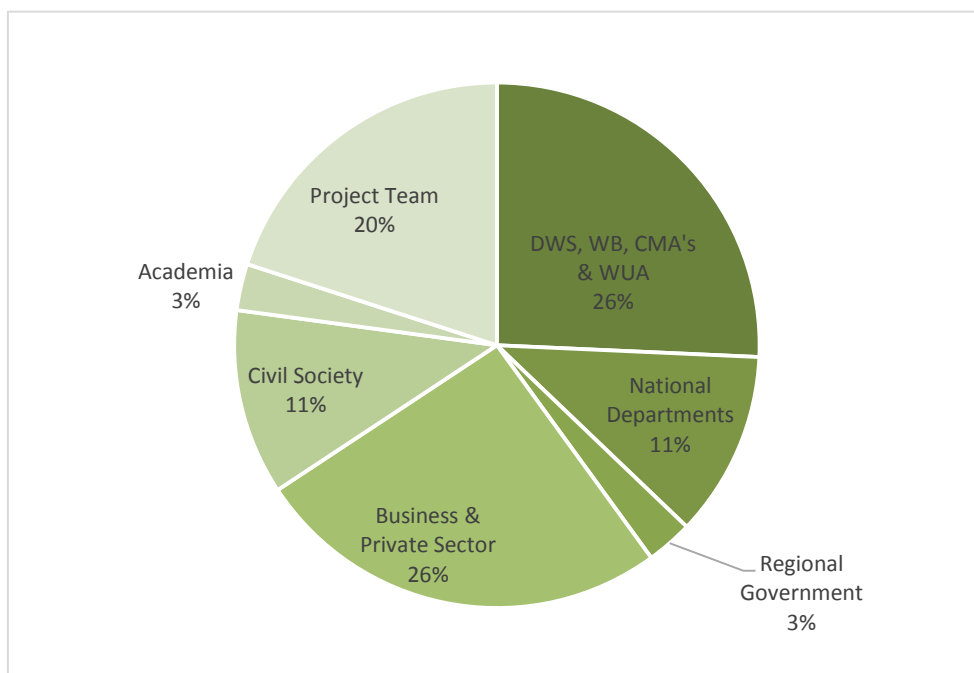
### 3.2 Policy and Strategy Phase

#### 3.2.1 Policy and Strategy development workshops

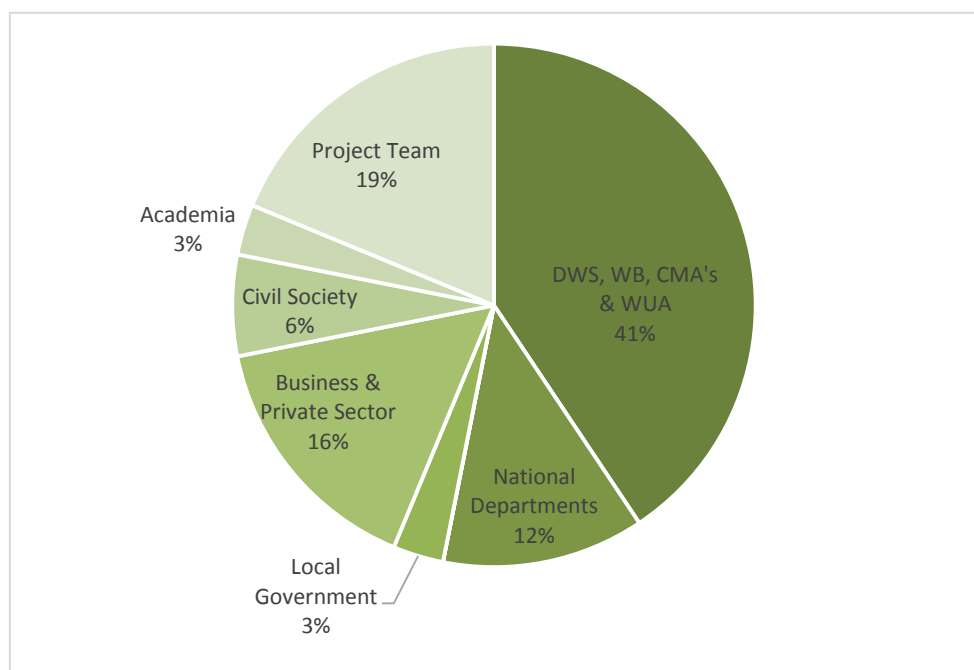
The Policy and Strategy development workshops were scheduled for 14<sup>th</sup> June 2016 and 26<sup>th</sup> August 2016 respectively where approximately 100 stakeholders were invited to each

workshop. The nature of these events was to discuss and co-develop the first Editions of the Policy and Strategy, which would then be tested by a wider audience during the Provincial and National Inter-Departmental Workshops.

A wide variety of stakeholder groups were invited, and their attendance breakdown for the Policy and Strategy Workshops are presented in Figure 11 and Figure 12 respectively.



**Figure 11: Attendance statistics at the Policy Development Workshop**



**Figure 12: Attendance statistics at the Strategy Development Workshop**

Once finalised, the first editions of the Policy and Strategy documents were uploaded onto the IWQMS website and emailed to the Provincial stakeholders, together with a high-level discussion note, to be used to engage stakeholders at the Provincial Workshops.

### 3.2.2 Provincial Workshops

Letters of invitation were sent out to the Provincial heads informing them of the workshops and asking for their support in nominating champions to help support the organisation and compiling of the stakeholder lists. Most of the provinces sent out their own invitations, which the project team supported in drafting. The invitations being sent out by provincial staff showed their stakeholders that the DWS Provincial official was taking ownership and responsibility for the workshops and showed that the Department is committed to being engaged with its stakeholders. This type of official communication is highly recommended for all Department engagements.

The Provincial Workshop engagements were scheduled to take place in September/October 2016. Based on the availability of the DWS and CMA staff and in order to provide time for further interaction on Edition 1 of the IWQM Strategy by the project committees before it was disseminated, the road shows were moved on by 1 month to take place during October to November 2016. A day before these workshops, a half day Capacity Building training session was held with each of the Provincial, Proto-CMA and CMA staff involved in managing water quality in their respective provinces.

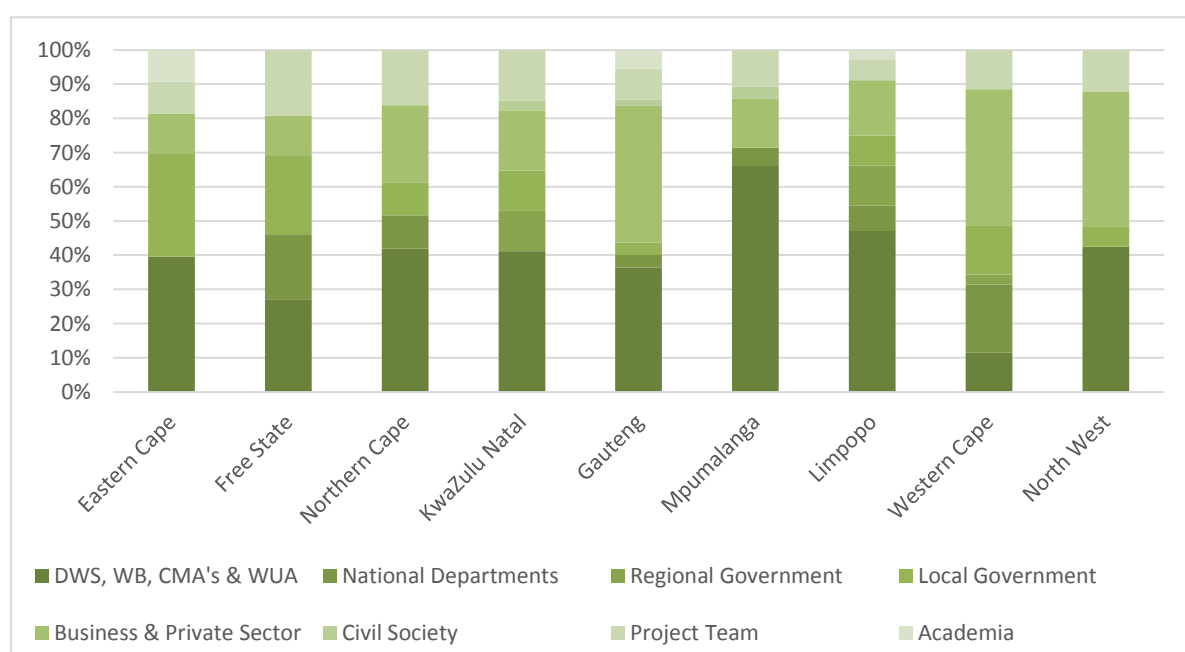
Presented in Table 4 and Figure 13 is a summary of the attendance statistics at the Provincial Workshops. These Workshops were organised with the support of the nominated Provincial/Proto-CMA/CMA representatives in each of the provinces.

**Table 3: Provincial Workshop Dates**

No.	PROVINCE	CITY	WORK SHOP	ATTENDANCE
1	Eastern Cape	East London	12 <sup>th</sup> October 2016	43
2	Free State	Bloemfontein	14 <sup>th</sup> October 2016	26
3	Northern Cape	Kimberley	18 <sup>th</sup> October 2016	31
4	KwaZulu-Natal	Durban	25 <sup>th</sup> October 2016	34
5	Gauteng	Pretoria	28 <sup>th</sup> October 2016	55
6	Mpumalanga	Nelspruit	1 <sup>st</sup> November 2016	56
7	Limpopo	Polokwane	4 <sup>th</sup> November 2016	68
8	Western Cape	Cape Town	9 <sup>th</sup> November 2016	35
9	North West	Rustenburg	18 <sup>th</sup> November 2016	33

**Table 4: Attendance Statistics at Provincial Workshops**

PROVINCE	EC	FS	NC	KZN	GAU	MPU	LIM	WC	NW
DWS, WB, CMA's & WUA	17	7	13	14	20	37	32	4	14
National Departments		5	3		2	3	5	7	
Regional Government				4			8	1	
Local Government	13	6	3	4	2		6	5	2
Business & Private Sector	5	3	7	6	22	8	11	14	13
Civil Society				1	1	2			
Academia	4				3		2		
Project Team	4	5	5	5	5	6	4	4	4
<b>TOTAL</b>	<b>43</b>	<b>26</b>	<b>31</b>	<b>34</b>	<b>55</b>	<b>56</b>	<b>68</b>	<b>35</b>	<b>33</b>



**Figure 13: Attendance Statistics at Provincial Workshops**

The stakeholder workshops saw a range of targeted stakeholders from mining, agriculture, academia, business, NGO's, community forums, provincial Departments (DWS, DEA, DMR, DAFF, COGTA, NT) CMA and proto-CMA attend the sessions which allowed for, honest and robust discussion's around the state of water quality. The IWQM Strategy was well received with the stakeholders providing critical inputs to strengthen the IWQM Strategy, but also inputs to inform the Implementation Plan.

**The salient points reflected from the Provincial Workshops are summarised as follows:**

- There is a large base of support the Department can draw on from its stakeholders;
- The need for capacitation, not only of DWS staff, but the sector as a whole;
- The need for a higher level of accountability, both of the Department and of the polluters, through improved compliance, monitoring and enforcement;
- The critical need for improved communication and information dissemination; and
- The need for the implementation of the Waste Discharge Charge System (WDCS).

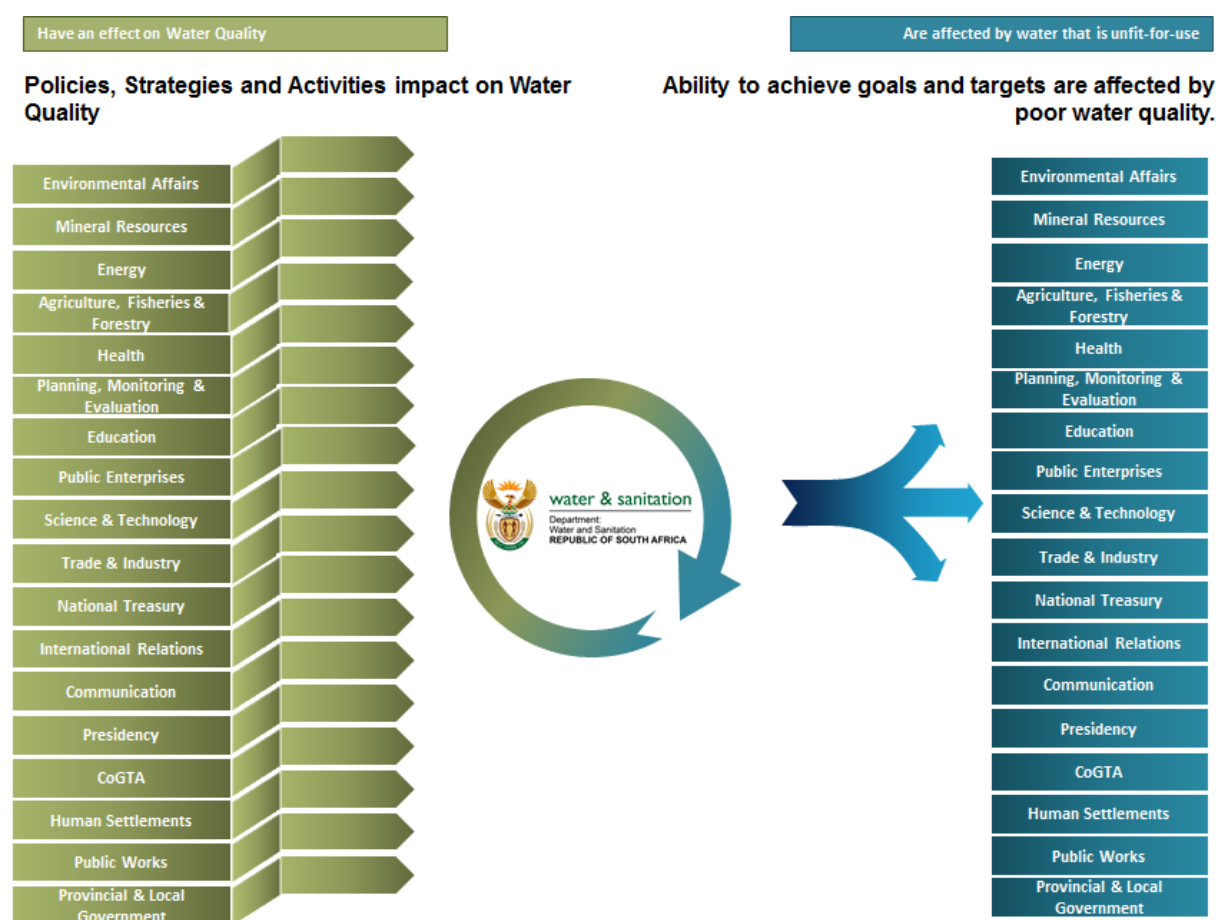
These inputs were taken forward by the project team into the next revision of the IWQM Policy and Strategy and provided many valuable insights to take forward to the development of the IWQM Implementation Plan and Monitoring and Evaluation Framework.



**Figure 14: Photographs from the Provincial Workshops**

### 3.2.3 National Inter-Departmental Workshop

The National Inter-Departmental Workshop was the first formalised engagement with the other national government departments that could have a role to play in managing water quality, either through impacting on water quality based on the industry they represented (including mining, agriculture and urban land and water management), or be affected by poor water quality, such as the Departments of Tourism and of Health. (Figure 15)



**Figure 15. Visual representation of the various government departments whose mandates impact on, or are impacted by the quality of water in South Africa's water resources.**

A workshop with national government departments was held on the 10 February 2017, at Protea Hotel in Centurion. The purpose of the workshop was to introduce the initiative to revise South Africa's WQM Policy and develop an IWQM Strategy; provide an overview of the main outcomes and implications of the IWQM Strategy; to determine how to collaboratively support the IWQM Strategy; and to discuss the modalities for establishing an Inter-Departmental WQM approach.

The workshop was initially planned for November 2016. However due to delays in the provincial workshops and the time it took to obtain the necessary referrals by the Director Generals of the various departments I, as well as due to the restrictions on availability of the key members during the festive season, this workshop was moved to February 2017.

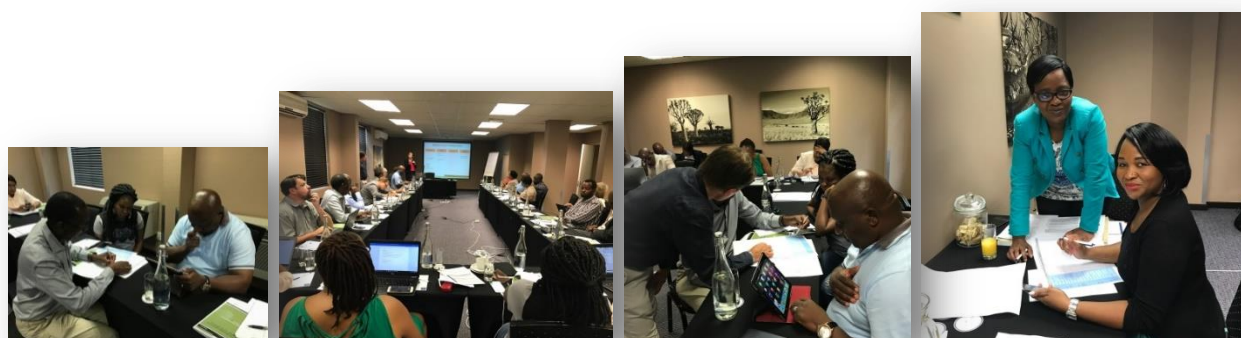
The official letter requesting the participation of the national government departments in the IWQM Workshop was approved by Director-General of DWS on 10 January 2017. This was followed by a briefing meeting with the Deputy Director-General Planning and Information on the 20<sup>th</sup> January 2017. Due to the unavailability of key participants, the workshop with National Departments, originally proposed for the 24 January 2017, was subsequently postponed to the 10<sup>th</sup> February 2017. As shown in Table 5, out of the 19 Departments that



were invited, representatives from 10 Departments participated in the workshop. Although National Treasury was not present at the workshop, given the importance of their involvement, a subsequent focus group meeting was held on 21 February 2017. The project did however circulate the documents and presentations to request written inputs from all departments, including those who were unable to attend the workshop.

**Table 5: List of responses for National Inter-Departmental Workshop**

Government Department	Attended National Workshop
Department of Mineral Resources	No
Department of Environmental Affairs	Yes
Department of Cooperative Governance	Yes
Department of Traditional Affairs	Yes
Department of Health	Yes
National Treasury	No
Department of Trade and Industry	No
Department of Tourism	Yes
Department of Science and Technology	Yes
Department of Land Reform and Rural Development	No
Department of Energy	No
Department of Basic Education	No
Department of Higher Education and Training	Yes
Department of Planning, Monitoring and Evaluation	Yes
Department of Human Settlements	Yes
Department of Communication	No
Department of International Relations and Cooperation	No
Department of Public Enterprises	Yes
Department of Agriculture Forestry and Fisheries	Yes



**Figure 16: Photographs from the National Inter-Departmental Workshop**



There was great enthusiasm from the attendees at the workshop. This platform formed the foundation for future engagements between the DWS and other Government Departments, to coordinate, align and share resources when it comes to WQM approaches.

### 3.2.4 Focus Group Meetings

A number of focus group meetings were held to obtain puts to the Policy and Strategy and to work towards the development of the IWQM Implementation Plan. Focus Group meetings were held with specific groups of representatives, including the DWS, National Treasury in particular a DWS alignment meeting was arranged where all the DWS Line functions were asked to present on their current WQM related initiatives. This workshop, held on the 19<sup>th</sup> January 2017, was extremely well attended (47 participants) and provided key insights into 1) other policies, strategies and implementation plans that the IWQM products should align with, and inform, 2) the WQM processes that were currently being followed and 3) the challenges that were being experienced within the DWS WQM function. It also highlighted the fact that the WQM function in the DWS was quite fragmented, with a vast array of role players and lacked a central champion.

## 3.3 Practice Phase

### 3.3.1 IWQM Symposium

The **IWQM Symposium** was held in May 2017. The purpose of the Symposium was to share innovative experiences that can support IWQM and to enable discussions about aspects that require coordination towards strengthening approaches to IWQM.

The symposium provided a platform for to showcase and discuss a number of current and innovative approaches that could contribute to the pragmatic implementation of the IWQM Strategy. The Symposium achieved its purpose as set out in the Inception Report and Stakeholder Engagement Strategy: *“A National WQM Symposium is to be convened in order to discuss and provide key lessons and implications for policy and strategy rollout”*. This was broadly a session for stakeholders to convene and discuss the key policy and strategy outcomes with the view of synthesizing implications for implementation. Opportunities to collaborate with other entities such as Research Institutions, WRC, and DST were also explored here.

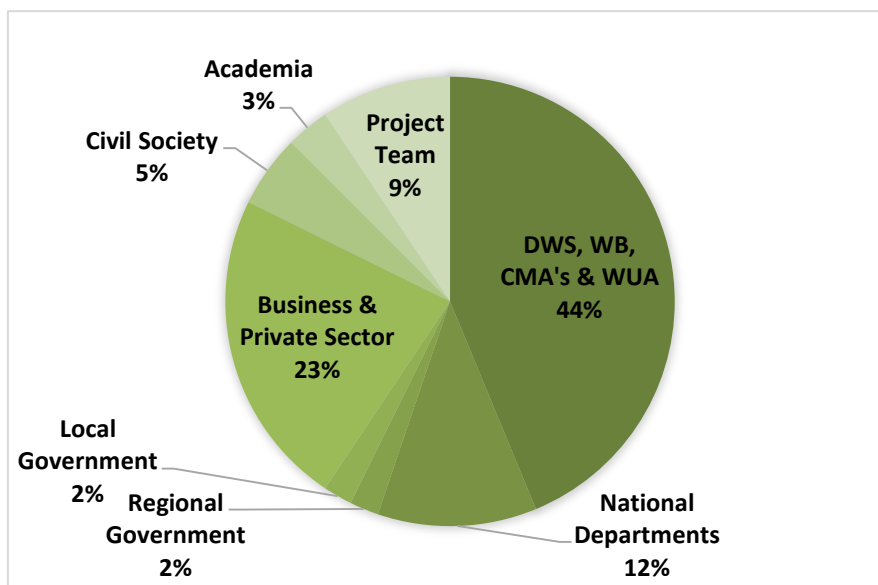
***The salient findings from the IWQM Symposium have been summarised as follows:***

- **The Policy and Strategy were well received:** A number of comments were received from a range of stakeholders which included Government Departments, Private Sector, Civil Society and Academia, both at the Symposium, and through email communication.
- **Draw on lessons** from global experiences, but **ensure SA context:** This reiterated the need to ensure localised solutions.

- **ACT! Draw a line in the sand and implement:** It was agreed that there is no perfect solution or implementation plan, and many lessons will also be learnt through doing.
- Effective implementation requires **good governance by appropriate institutions and strategic adaptive management:** It was agreed that the function of water quality needs to be looked at across the sector and that the appropriate institution is responsible for implementation.
- **Understanding the source of finance and funding:** This was to ensure that the sector becomes more effective and efficient with the pool of resources it currently has at its disposal.
- **Match sources of finance to water management interventions:** This alluded to the IWQM Investment Framework that is required.
- **Embed project development into an Investment Framework:** This is required to ensure that the sectors funding stream supports its interventions.
- **Build on existing partnerships** in SA such as the Strategic Water Partners Network (SWPN), the Water Sector Leadership Group (WSLG), MWCB (Mine Water Coordinating Body (MWCB), Cooperative Inland Water Safety Programme (CISWP) and the NBBN (National Business and Biodiversity Network): There are a number of successful partnerships that have been established, lessons learned from these establishments should be used for future partnerships/engagements.
- **Ensure good governance and societal engagement:** This talks to the need for an inclusive and people-centric approach to WQM.
- **Knowledge management across the sector will be key for the effective implementation the IWQM Strategy:** This supports the integrated and inclusive approach to IWQM and ensures that calls for capacity to be built across the sector.
- **Information must be effectively utilised to improve water quality:** It was agreed that water quality information should not only be collected and stored, but also used needs to be translated into information and must be used to inform actions that need to be taken to improve resource water quality, and
- **Make it easier to determine violations, administer punishment and deter polluters:** It was agreed that determining violations, administering punishment and deterring polluters should not be administratively onerous, so that quick action can be taken.

Although the comment was received that more time for discussions was required, overall, the Symposium was well received and positive feedback was received at the event. An audio recording of the symposium, photos taken by DWS Communications, the attendance register and the proceedings of the Symposium are available as proof of delivery. The presentations from the symposium were also made available on the DWS Website. The key messages and concepts that arose from the symposium presentations, as summarised above, were used to further develop the Implementation Plan for the IWQM Strategy.

Presented in Figure 17 is the attendance statistics from the IWQM Symposium, which had excellent representation from the core stakeholder groups, with around 108 stakeholders in attendance.



**Figure 17: Attendance statistics for the IWQM Symposium**



**Figure 18: Photographs from the National IWQM Symposium**

### 3.3.2 Water Quality Indaba

In terms of the ministerial launch mentioned in the Stakeholder Engagement and Communication Strategy, which was suggested to be part of the Symposium, as per the agreement with DWS Communications, the symposium would be used as a step towards a much larger event (+1000 people), to be organised by the Department where the public would be invited to a launch of the policy and strategy. This event would be called the Water Quality Indaba and would be used as a potential platform during the public consultation period for the gazetting of the IWQM Policy. It was agreed that the symposium would be a technical event, with a 100-120-person capacity, aimed at a wide range of key stakeholders who are involved in some or other aspect of the WQM field.

## 3.4 Project Management Phase

### 3.4.1 PAC

A total of 18 PAC meetings were held, this includes the inception meeting at the beginning of the project and one upon Close-out in October 2017.

Where needed, separate reviewers' meetings were held. These meetings provided additional opportunities for members of the PAC (and PMC and PSC) to have dedicated time to provide comments and to discuss those comments on specific deliverables. This included a reviewers meeting for the Policy and Strategy, the Literature survey reports and the reports which were produced during the Implementation phase of the project.

### 3.4.2 PMC

Water Quality Management is in some way or another the responsibility of almost all the line function Directorates in DWS, which meant that a large membership list was necessary in order to ensure all line-functions involved with WQM in the Department, its provinces and the CMAs were invited to participate in the PMC. The purpose of the PMC was to provide operational guidance and as such PMC members that were invited to attend were DWS and CMA officials that operated at a technical level.

A total of 7 PMC meetings were scheduled (Please refer to Stakeholder Engagement Schedule for further information on meetings). Of the 68 members that were invited, an average of 28% of members would attend each meeting. A breakdown of the attendance and response statistics are presented in Table 6.

Even though the broader representation of line functions were not in attendance, those members that did attend were directly involved with WQM and gave significant input in guiding the project, and played more of a role in strategically guiding the project than the PSC meetings did. A total of 8 members consistently attended more than 5 of the 7 PMC meetings.

All documents were emailed to PMC meetings at least a week in advance, the content of the documents was presented on during the meeting, and generally, and additional few days were given for the PMC to comment on the documents.

**Table 6: PMC Meeting Statistics**

PMC Meetings	PMC 1	PMC 2	PMC 3	PMC 4	PMC 5	PMC 6	PMC 7
Total Invited	68	68	68	68	68	68	68
Total Responded Yes	0	13	18	13	18	12	0
Total Responded Declined	0	0	2	0	0	12	4
Total Responded Tentative	0	0	1	0	0	1	0
Total Responded (Yes, Declined, Tentative)	0	13	21	13	18	25	4
Total No-Response	68	55	47	55	50	43	64
<b>Total Attended</b>	<b>18</b>	<b>23</b>	<b>19</b>	<b>20</b>	<b>12</b>	<b>15</b>	<b>25</b>
<b>% Attendance</b>	<b>26%</b>	<b>34%</b>	<b>28%</b>	<b>29%</b>	<b>18%</b>	<b>22%</b>	<b>37%</b>

### 3.4.3 PSC

Letters to invite members to participate in the PSC meetings were sent in February 2016. The PSC meetings consisted of 84 members. As with the PMC, the large number of role-players in WQM within government necessitated a large PSC invitation list. The purpose of the PSC was to provide strategic guidance and as such the selection of the members was done according to rank (senior members were invited to attend), across the various line functions within DWS, CMAs, Water Boards and other National Government Departments. Although it would have been preferred to have a smaller, more targeted PSC, a large group was deemed necessary in order to ensure that senior members of the DWS and other government departments were provided with an opportunity to participate at a project management level.

A total of 5 PSC meetings were held, of which the average attendance was 17% (excluding the project team). A breakdown of the attendance and response statistics are presented in Table 7.

**Table 7: PSC Meeting Statistics**

PSC Meetings	PSC1	PSC2	PSC3	PSC4	PSC5
Total Invited	84	84	84	84	84
Total Responded Yes	15	18	15	16	19
Total Responded Declined	7	10	8	18	13
Total Responded Tentative	0	1	4	5	0
Total Responded (Yes, Declined, Tentative)	22	29	27	39	32
Total No-Response	62	55	57	45	52
<b>Total Attended</b>	<b>24</b>	<b>25</b>	<b>19</b>	<b>14</b>	<b>17</b>
<b>% Attendance</b>	<b>29%</b>	<b>30%</b>	<b>23%</b>	<b>17%</b>	<b>20%</b>

Given the fact that many of the PMC members were often delegated to attend the PSC meetings and especially in cases where topics and aims of the meetings were similar, various PMC and PSC meetings were combined. Where PSC meetings were held valuable discussions and inputs were obtained.

Given that the reason for poor attendance was that many representatives already had other commitments, consideration could be made to combine the meetings with other DWS initiatives that require the attendance of the same representatives. Alternatively, Future PSC meetings committees selection could be stricter and more targeted to ensure that the efforts are put into obtaining committed representation, rather than the quantity of individuals.

As with the PMC, all documents were emailed to PSC members at least a week in advance, the content of the documents were presented on during the meeting, and generally, and additional few days were given for the PSC to comment on the documents.

It should be noted that all minutes to the meetings, presentations and the attendance registers were made available to the members and stored on the Project Information Database.

*Comments from the above engagements were captured in the minutes of the meetings. Minutes of the key stakeholder engagement meetings are included in Appendix D.*

## 4. COMMUNICATION AUDIT

The communication strategy was designed to be focused, appropriate and simple. As such the Communication Strategy Action Plan was split into three key themes including:

- 1) *Awareness on the project,*
- 2) *Communication of the project progress, and*
- 3) *Communication of the key products of the project.*

### 4.1 Communication for Awareness

Communication for the purpose of creating awareness was foundational to the project. There were 4 main tools or channels that were used. Table 8 reflects on those channels, the target audience to be communicated with, the timeframes for the communications that were proposed as well as comments on the actual implementation of the tools/channels.

**Table 8: Awareness creation**

Tools and Channels	Target audience	Timeframe	Comments
<b>IWQMS Website</b>	All	On-going	A website was created in April 2016 and was used as a platform to share information regarding the project, its outcomes and the products that were being developed (Figure 19). The website also included a “registration” page, for stakeholders to be included onto the IWQM database and distribution list for information purposes. Since the inception of the website, 36 stakeholders registered on the website and have been included on the IWQM Stakeholder database.
<b>Newsletters</b>	DWS & Water Sector	At the 4 key steps in the project: WQM Challenges, Policy, Strategy and Converting policy into practice	All 4 Newsletters were developed and circulated to the broader stakeholder database (consisting of just over 800 stakeholders). An additional Newsletter was developed specifically for the IWQM Policy Gazetting Process to be used by the DWS: Policy Directorate.
<b>DWS Internal Communications (DWS Intranet, SHOTHA, DWS)</b>	Internal to DWS	As and when required	The DWS project team ensured that various information was placed on SHOTHA, the DWS internal communications page or “Green Screen”



Tools and Channels	Target audience	Timeframe	Comments
Speaks)			as well as DWS speaks. These platforms were extremely useful during the provincial workshop periods.
CMF announcements/ Presentations	Catchment stakeholders	As and when possible (there are approximately 71 active CMFs across SA)	The DWS staff as well as staff from numerous CMAs and Proto-CMAs presented at various CMF platforms. A high-level overview of the project and its outcomes were presented. A total of 40 CMF's were informed of the project (Table 9).  Newsletters that were developed at the time were also distribute to stakeholders.



## WATER IS LIFE, SANITATION IS DIGNITY

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### HOME PAGE




**REVISION OF WATER QUALITY MANAGEMENT (WQM) POLICIES AND STRATEGIES FOR SOUTH AFRICA**

*What is meant by Water Quality?*

Water quality is a term used to describe the chemical, physical, and biological characteristics of water, usually in respect to its suitability for an intended purpose. These characteristics are controlled or influenced by substances, which are either dissolved or suspended in water.

Although scientific measurements are used to define the quality of water, it's not a simple thing to say that "this water is good," or "this water is bad". The quality of water that is required to wash a car is not the same quality that is required for drinking water. Therefore, when we speak of water quality, we usually want to know if the water is good enough for its intended use, be it for domestic, farming, mining or industrial purposes, or its suitability to maintain a healthy ecosystem.

Water Quality Samples taken by DWS staff for Laboratory analysis.  
Photos: B. Hohlis (DWS)

### ANNOUNCEMENTS

- ▶ [STAKEHOLDER REGISTER](#)  
Register as a Stakeholder
- ▶ [New Reports](#)  
Download New Reports

Figure 19. Screenshot of the IWQMS Website



**Table 9: List of catchment management forums where presentations and announcements were made by the DWS project team and staff from the CMAs/Proto-CMA's and of whom members attended the various project engagements**

Province	Catchment Forum
Free State	Schoon-Koekemoerspruit Catchment Management Forum
Free State	Sand-Vet Catchment Management Forum
Free State	Modder-Riet Catchment Management Forum
Gauteng	Rietspruit Catchment Management Forum
Gauteng	Grootdraai Dam Catchment Management Forum
Gauteng	Vaal Dam Catchment Management Forum
Gauteng	Leeu-Taaiboschspruit Catchment Management Forum
Gauteng	Wonderfonteinspruit Catchment Management Forum
Gauteng	Wilge River Catchment Management Forum
Gauteng	Blesbokspruit Catchment Management Forum
Gauteng	Klip River Catchment Management Forum
Gauteng	Mooi River Catchment Management Forum
Kwa-Zulu Natal	St Lucia Catchment Management Forum
Kwa-Zulu Natal	Pongola Catchment Management Forum
Kwa-Zulu Natal	Mhlatuze Catchment Management Forum
Kwa-Zulu Natal	Umfolozu Catchment Management Forum
Kwa-Zulu Natal	Abaqulusi Catchment Management Forum
Kwa-Zulu Natal	Mzimaye Catchment Management Forum
Kwa-Zulu Natal	Lower Mvoti Catchment Management Forum & KwaDukuza Environmental Working Group (joint meeting)
Kwa-Zulu Natal	Amanzimtoti Catchment Management Forum
Kwa-Zulu Natal	Upper Umgeni Catchment Management Forum
Kwa-Zulu Natal	Tongaat/Mdloti Catchment Management Forum
Kwa-Zulu Natal	Umsunduzi Catchment Management Forum
Limpopo	Luvuvhu Catchment Management Forum
Limpopo	Mutale Catchment Management Forum
Limpopo	Nzhelele/Nwandi Catchment Management Forum
Mpumalanga	Upper Komati Catchment Forum
Mpumalanga	Olifants River Catchment Management Forum
Mpumalanga	Olifants sub-catchment forum: Lower Olifants
Mpumalanga	Olifants sub-catchment forum: Letaba and Shingwedzi
Mpumalanga	Olifants sub-catchment forum: Steelpoort
Mpumalanga	Olifants sub-catchment forum: Middle Olifants
Mpumalanga	Olifants sub-catchment forum: Upper Olifants
Northern Cape	Lower Vaal Catchment Management Forum
Northern Cape	Kgalagadi Catchment Management Forum
Northern Cape	Lower Orange Forum

Province	Catchment Forum
Western Cape	Berg River Estuary Forum,
Western Cape	Verlorenvlei Forum
Western Cape	Stellenbosch River Collaborative

\* There were limited active CMF's in the Eastern Cape (Mzimvubu) at the time of this project. A large amount of representatives that would be present at these forums did however attend the Eastern Cape provincial workshop (L Jack Pers. Comm, July 2017).

The IWQM Symposium achieved national coverage through various online platforms. The Communication Department published an article entitled: *Water and Sanitation hosts Integrated Water Quality Management Symposium*<sup>1</sup>. A journalist from Engineering News attended the IWQM Symposium, and published an article entitled: *Government focussed on improved water quality management*<sup>2</sup>. In addition, an article entitled: *Water quality management policies soon to be released for public comment*<sup>3</sup> appeared on Infrastructure News online.

Overall, the platforms and tools/channels used to create awareness around the project worked well.

#### 4.2 Communication for IWQM Policy and Strategy Development

The IWQM Policy and Strategy were iteratively developed. First editions of both the IWQM Policy were developed and then tested with various stakeholders, as reflected in Chapter 3. Table 10 below lists the tools and avenues used for communicating the progress with the assessment, policy, strategy and implementation phases of the project and their outcomes.

**Table 10: Processes to develop policy and strategy**

Tools and Channels	Target audience	Timeframe	Comments
<b>Newsletters</b>	DWS & Water Sector	At the 4 key steps in the project: WQM Challenges, Policy, Strategy and Converting policy into practice	All Newsletters were circulated to the broader stakeholder database, not just DWS and the Water Sector.
<b>SHOTHA, DWS Speaks, DWS "Green Screen"</b>	Internal to DWS	As and when required	An invitation to attend the WQM Challenges workshop was posted on the internal DWS communication page (also known as the "Green Screen").

<sup>1</sup> <http://www.gov.za/ts/speeches/water-and-sanitation-hosts-integrated-water-quality-symposium-31-may-2017-0000>

<sup>2</sup> [http://m.engineeringnews.co.za/article/government-focused-on-improving-water-quality-management-2017-05-31/rep\\_id:4433](http://m.engineeringnews.co.za/article/government-focused-on-improving-water-quality-management-2017-05-31/rep_id:4433)

<sup>3</sup> <http://www.infrastructurenews.co.za/2017/06/05/water-quality-management-policies-to-soon-be-released-for-public-comment/>

Tools and Channels	Target audience	Timeframe	Comments
			Summaries of outputs from the project were also placed on this page from time to time. An article in DWS Speaks was published in December 2016 and contained feedback on the projects progress and on the WQM provincial Roadshows that were held earlier that year.
<b>Project Governance Structures</b>	PMC, PSC, PAC	At key stages in the project	These structures were heavily engaged during the development of the IWQM Policy and Strategy. The draft and final documents were circulated to all members for inputs. Minutes of the meetings as well as the responses to the actions lists were also circulated to track progress.
<b>One-to-one meetings</b>	Sector Experts	As and when required during the course of the project	During the development of the Policy and Strategy a number of one-to one meetings were held. In particular, a meeting was held with Prof. Tally Palmer to discuss the inclusion of Complex Social Ecological Systems and this work she and her team were doing around this. Meetings were also held with various senior management DWS personnel to obtain their specific inputs. Meetings with teams that were busy with parallel initiatives, including the WQM policy Chief Directorate and the Organisational Design team were also held.
<b>Focus Group Meetings</b>	Sector Groups	As and when required during the course of the project	During this stage, a number of focus group meetings were held, including with 3 municipalities in Cape Town, National Treasury and with DWS WQM line-function officials.
<b>Stakeholder Workshops</b>	Key interested and affected parties	At the 4 key steps in the project: WQM Challenges, Policy, Strategy and Converting policy into practice	Three broad stakeholder workshops were held: (1) IWQM Challenges, (2) Policy and (3) Strategy development workshops. Stakeholders were sent out discussion documents or draft reports prior to the meeting as well as the link to the website, for additional

Tools and Channels	Target audience	Timeframe	Comments
			information on the project. Minutes of these meetings were also circulated.
<b>Provincial Road shows</b>	Key interested and affected parties	September – October 2016	<p>The 9 provincial roadshows took place between October and November 2016, as described in Chapter 3.</p> <p>Stakeholders were sent out discussion documents and draft reports prior to the meeting as well as the link to the website, for additional information on the project.</p> <p>Minutes of these meetings were also circulated and the presentations were placed on the DWS IWQMS Website.</p>
<b>National WQM Workshop</b>	National Government Departments	November 2016	<p>The National Inter-Departmental Workshop took place in February 2017, as discussed in Chapter 3.</p> <p>Stakeholders were sent out discussion documents prior to the meeting as well as the link to the website, for additional information on the project.</p> <p>Minutes of the National Workshop were circulated as well as the draft policy and strategy, for additional comments.</p>
<b>WQM Symposium</b>	Key interested and affected parties	April 2017	<p>The WQM Symposium took place in May 2017, as described in Chapter 3.</p> <p>Stakeholders were sent out discussion documents or draft reports prior to the meeting as well as the link to the website, for additional information on the project.</p> <p>Copies of the discussion document were printed out and distributed on the day of the Symposium.</p> <p>The Symposium proceedings were also circulated and the presentations were placed on the DWS IWQMS Website</p>

### 4.3 Communication for Implementation Support

The products developed here will support Implementation by being accessible on the various channels identified.

**Table 11: Products for implementation support**

Products	Target audience	Timeframe	Comments
<b>IWQMS Website</b>	All	September 2017	The IWQMS Website will be updated to reflect all the final products, including the Implementation Plan for IWQM. This will be finalised in September 2017.
<b>Final Reports, box sets</b>	All	September 2017	All final reports to date have been posted on the IWQM Website. Any additional final products will be posted, once finalised and approved. A final print-quality product will be printed and handed over to the DWS project Manager at the end of September 2017; this includes a few hundred copies of the brochures which will be used for further awareness creation on the products, together with the electronic copies of the reports for further printing and distribution.
<b>Training Tools</b>	DWS & Water Sector	August 2017	As part of the Capacity Building Training programme, a set of tools (including training presentations and a vast literature database and WQM training video) were distributed to the trainees. Electronic copies of the tools were also submitted to the DWS Project Manager for future use and distribution.
<b>Posters and Banners</b>	All	June 2016	2 Banners were developed in September 2016, to be used during the Provincial Roadshows, the National Inter-Departmental Workshop, the DWS Policy/Strategy Liaison Meeting, and the National Symposium as well as at the Capacity Building Training session which was held from 14-18 August 2017.  The banner images could be used as posters; however, no other posters were developed as part of this project.

In addition to the above, a File-Transfer-Protocol Platform was developed to house all final documents from the project and to which inputs from the Project committees could be posted, especially where the files were too large to email. These included databases, minutes from meetings, attendance registers, presentations and project reports.



## 5. RECOMMENDATIONS

Presented below is a summary of the recommendations distilled from the key findings for consideration.

For the **stakeholder engagements**, particularly for the Provincial Workshops, the support of on the ground DWS and CMA staff proved extremely valuable in getting the right stakeholders to attend. Their participation also showed shared ownership of the project and firmed ties with their stakeholders. Support from senior staff in terms of presenting on their projects and chairing engagements and attendance of DWS staff at these workshops also provided a platform for them to showcase the work being done by the Department to drive improvements in water quality and its management, and hear first-hand the challenges and issues that stakeholders face, thereby strengthening bonds between government and its citizens.

It should also be noted that these engagements helped expand the stakeholder database for IWQM; disseminate information around IWQM challenges and opportunities; improved awareness and started building a “Community of Practice” around IWQM, both within and external to Government.

Although valuable inputs were received from the **PMC/PSC**, the attendance was not as high as would be preferred. A number of reasons came to light during the project, this included competing interests where members were required to attend other, higher priority meetings, committee fatigue, i.e. the same staff being on a number different committees, and in some cases the lengthy time required for government officials to get approval to attend meetings contributed to low responses. It is suggested that for future projects of this nature, letters be sent to senior managers of the various DWS Directorates, CMAs and other government departments to delegate representatives and that meeting dates for all PMC and PSC meeting be set at the beginning of the project.

For the **tracking of website traffic**, whilst the IWQMS Website proved very useful to share information, it would be good to understand the traffic that the website sees and find broader ways in which to direct people to the website. It is a wide-reaching platform, and whilst reference has been made in all presentations and documents, there is no measure of the volume of traffic going to the website.

Uptake by the DWS provincial staff to present the Policy and Strategy to their constituents could have been improved through better up front and dedicated mentoring by the DWS project team. This approach was later followed in preparation for the gazetting of the IWQM Policy, which proved to be highly effective and a key process to increasing the resources available for stakeholder engagement and communication. In addition, the fractured nature of the WQM function and the absence of a **consolidated list of WQM officials in the DWS and CMAs** made the selection of champions a tedious process and various uncertainties

arose when compiling lists of DWS stakeholders that should be invited to champion water quality in each respective area.

Despite the above potential gaps and challenges, *the engagement process that was followed in the development of the key products of the project was a success, with multiple positive feedback received on the outcomes of the project.* A total of just over 800 stakeholders (excluding those that attended the catchment forums where the products were presented) were engaged with in some form or another during the project.

The high quality of the products that have been produced in this project would not have been possible without the inputs from the stakeholders that participated, whether this be during the engagements, in writing or via the website. It is hoped that the momentum that this project has developed with regards to placing water quality on the discussion agenda will continue as DWS and sector proceeds with the implementation of the IWQM Policy and Strategy.

Going forward beyond this project, continued communication on WQM, the challenges that are faced, and the role that everyone can play in addressing these challenges will be important and a number of recommendations in this regard are provided in the IWQM Implementation Plan, this includes the recommendation that DWS, in collaboration with the sector develop and implement a **IWQM Communication Strategy**, which should consist of an annual report to parliament on the state of water quality, continued newsletters for consumption by the public on the progress with and developments on WQM related projects, and the development of a broader public awareness campaign around “*Clean Water: Everyone lives downstream and has a role to play!*”



## APPENDIX A: LIST OF ACKNOWLEDGEMENTS

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Eskom  
Eskom  
Exxaro Coal Mine  
IVA Plats  
Joint Water Forum  
Joint Water Forum  
LDARD  
LEDET  
LEDET  
LEDET  
Lepelle Northern Water  
Lephalale Municipality  
Lephalale Sub-catchment  
Lephalale Sub-catchment  
Letaba Water User Association  
LIM 368  
LIM 368  
LIM 368  
Lower Mogalakwena Sub-catchment  
Luvuvhu CMF  
Luvuvhu CMF  
Makhado Catchment  
Mogalakwena  
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Mutale CMA  
Mutale CMF  
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Sibusiso Maseko	DWS Institutional Oversight HO
Felicia Nemathaga	DWS RPW Mines
Michiel Meets	Eco-Owl Consulting
Bridget Fundikwa	Green Cape
Gareth McConkey	Jantech CC
Irene Waller	La Bri
Jiahnah Göbel	Living Lands
Elizabeth Were	See Saw (probably)
Adriaan Kurtz	Stellenbosch Municipality
Esmari Steenkamp	Swartland Municipality
Johan de Jager	Vin Pro
Rudolph Rescher	Western Cape Department of Agriculture
Lydia van Rooyen	Wildlands
Adriaan Oelofse	Winetech
Anel Andrag	Winetech
Derick Kellerman	Xylem

#### **Regional Workshop North West**

Anna Malemela	DWS
Jenny Evans	DWS
Kevin Khoze	DWS
Lillian Siwelane	DWS
Mahadi Mofokeng	DWS
Phillip Tjale	DWS
Sebenzile Ntshangase	DWS
Sharlotte Tema	DWS
Tshepo Mathebe	DWS
Kentse Mathiba	DWS Head Office
Ndivho Mphuma	DWS Limpopo North West Proto-CMA
Lucky Motsoeneng	Glencore BHK
Lelanie du Preez	Glencore Rhovan Operations
Lynette Tungwane	Glencore Western Mine
Keneilwe Makwela	Glencore Western Mines
Tania Rademeyer	Impala Platinum
Abram Semata	Land Bank
Beatrice van der Merwe	Marico River Conservation Association
Irene van der Merwe	Marico River Conservation Association
Shalene Janse van Rensburg	Midvaal Water Co
Mothusi Mafatshe	Pilanesberg Platinum Mines
Peter Lentsoane	Platmin SA
Tshepo Dire	RB Plats
Stenly Makuwa	Tlokwe City Council
Thuli Letseka	Tlokwe City Council
Hlulani Chauke	Union Mine Anglo American
Mmalenyalo Moeng	Union Mine Anglo American

## IWQM National Symposium

Tswelopele Pida	African Rainbow Minerals
Hannes De Wet	Agri MP
Janse Rabie	Agri SA
Janse Rabin	Agri SA
Mark Dent	AWS
Misaveni Ngobeni	BNT
Melissa Fourie	CER
Amanda Mkhonza	CER
Johan Kapp	CRM
Sibonginkosi Maposa	CSIR
Matome Mathetha	CSIR
Edwin Mamejja	DAFF
Nomvuzo Mjadu	DAFF
Takalani Sithi	Department of Tourism
Joan Arrikum	DPE
Andretta Tsebe	DPE
Phawen Maluleke	DRDLR
Magamase Mange	DST
Tsakane Baloi	DWS
Wilna Bezuidenhout	DWS
Eustathia Bofilatos	DWS
Marie Brisley	DWS
Laura Dotse	DWS
Fanus Fourie	DWS
Nwabisa Fundzo	DWS
Johan Greyling	DWS
Rachael Grobbelaar	DWS
Geert Grobler	DWS
Jackie Jay	DWS
Millicent Kabwe	DWS
Marius Keet	DWS
Kwaila Lamola	DWS
Knowledge Langa	DWS
Musa Lubambo	DWS
Maduvha Maseda	DWS
Patrick Milo	DWS
Zama Mncwabe	DWS
Ndileka Mohapi	DWS
Lerato Mokoena	DWS
Lebo Mosoa	DWS
Thobile Mthiyane	DWS
Anet Muir	DWS
Mxolisi Mukhawana	DWS
Moses Mukota	DWS
Namisha Muthraparsad	DWS
Beason Mwaka	DWS
Noxolo Ncapayi	DWS
Tovhowani Nyamande	DWS
Bongizenzo Nyawo	DWS
Rivashi Panday	DWS
Sputnik Ratau	DWS
Isa Thompson	DWS
Nnzumbeni Tshikalange	DWS
Itan Tshohale	DWS
Jurgo Van Wyk	DWS
Niel Van Wyk	DWS
Fred Van Zyl	DWS
Pieter Viljoen	DWS

Barbara Weston	DWS
Luvuyo Zigana	DWS
Anne Kilian	Engineering News
Ian Midgley	Eskom
Lutho Totsa	Eskom
Mariette Liefferink	FSE
Gabi Khumalo	GCIS
Annah Ngope	Glencore
Lynette Tungwane	Glencore
Joanna Goeller	Gold Fields
Zeveli Masuku	Govan Mbeki Municipality
Victor Munnik	Independent
Marcus Selepe	IUCMA
Stenly Makuwa	Johannesburg Water
Bertus Bierman	Lebalelo WUA
Shalene Janse van Rensburg	Midvaal Water
Marina Krüger	Midvaal Water
Robert Davel	Mpumalanga Agri
Iqbal Mohamed Ali	National Treasury
Sara Bopape	NTD
Amanda Nyingwa	Pegasys
Guy Pegram	Pegasys
Traci Reddy	Pegasys
Barbara Schreiner	Pegasys
Derek Weston	Pegasys
Francois Van Wyk	Rand Water
Morakane Madiba	Rhodes University
Tally Palmer	Rhodes University
Heather Booysen	Samancor
Shane Laubscher	Samancor
Bongani Mtsweni	Samancor
David Schaub-Jones	SeeSaw
Marilyn Govender	South African Sugar Association
Vukosi Tinghisi	South Deep Gold Mine
Michelle Proude	SWPN
Nick Tandi	SWPN
Tinashe Mukuta	University of Pretoria
Willem Hazewindus	WESSA & ARMOUR
Nonhlanhla Kalebaila	WRC
Robyn Arnold	Write Connection
Samir Randera-Rees	WWF
Klaudia Schachtschneider	WWF

### Capacity Building Training Sessions

Anet Muir	Director: CM Institutions & Municipality
Sizani Moshidi	Director: CM Agriculture
Elijah Mogakabe	SM: RQIS
Siboniso Mkhali	Director: CM Agriculture
Mxolisi Mukhawana	PM: D.A.M Strategy
Tovho Nyamande	Scientific Manager: Information Programmes
Pieter Viljoen	SM: WQP
Jackie Jay	Water Quality Planning: Central
Jurgo van Wyk	Water Quality Planning: Central
Geert Grobler	Water Quality Planning: East
Lebo Mosoa	Water Quality Planning: North
Yakeen Atwaru	Director: Reserve Determinations
Raquel Nosie Mazwi	Director: RPW
Desmond Mutshaine	RPW
Thivhafuni Nemataheni	RPW
William Mosefowa	RPW

Rendani Ndou	RPW
Malise Noe	RPW
Shibambu Steven	NC: Upington
Zethu Makwabasa	KZN: Pongola-Umzimkulu Proto-CMA
Renelle Pillay	KZN: Pongola-Umzimkulu Proto-CMA
Marcus Selepe	MPUM: Inkomati-Usuthu CMA
Samantha Saayman	MPUM: DWS (Inkomati)
Mercy Ralushai	MPUM: DWS (Inkomati)
Dephney Kabini	FS: DWS
Landile Jack	EC: DWS
Melissa Lintnaar-Strauss	WC: DWS
Nelisa Ndobeni	WC: DWS
Lillian Siwelane	NW: DWS
Petrus Venter	NW: DWS
Dennis Mtsweni	DWS
Lerato Mbotja	DWS: BFN
Mpho Mabuda	DWS
Machaba Motlatso	DWS
Ramahuma Livhuwani	DWS
Mathebe Tshepo	DWS
Nicole Vosloo	DWS: FS
Ramaremela Kedibone Peggy	DWS: FS
Thwala Mmapheto	DWS
Sebenzile Ntshangase	DWS: NW
Mokoena Lerato	DWS: BFN
Marie Brisley	DWS
Herbert Kutama	DWS
Kenneth Masindi	DWS
Sibusiso Maseko	DWS
Isaac Ramukhufa	DWS
Michael Munzhelele	DWS
Amanda Nyingwa	Pegasys
Derek Weston	Pegasys
Traci Reddy	Pegasys
Barbara Schreiner	Pegasys



## APPENDIX B: STAKEHOLDER ENGAGEMENT SCHEDULE

MEETING	DATE	PURPOSE	ATTENDANCE
PAC01	23 Oct 2015	<ul style="list-style-type: none"> <li>To introduce the DWS - PSP Project Teams and discuss project expectations;</li> <li>To discuss the scope of work in preparation for the Inception Report; and</li> <li>To plan for the first Project Management Committee (PMC) and Steering Committee (PSC) meetings</li> <li>To discuss and agree on the project schedule and deliverables for Quarter 3 (Oct-Dec 2015).</li> </ul>	P. Viljoen, J. van Wyk, J. Jay, D. Weston, T. Reddy, S. Francis
PMC01	23 Nov 2015	<ul style="list-style-type: none"> <li>Introduction of project</li> </ul>	See attendance register
PAC02	14 Dec 2015	<ul style="list-style-type: none"> <li>Discussion on the Inception Report</li> <li>Discussion on the Capacity Building Strategy</li> <li>To plan for the next Project Management Committee (PMC) and Steering Committee (PSC) meetings</li> </ul>	P. Viljoen, J. Van Wyk, J. Jay, D. Weston, T. Reddy, S. Francis
Meeting 1: Compliance and Monitoring	14 Dec 2015	<ul style="list-style-type: none"> <li>Integration and Expectations</li> </ul>	P. Viljoen, A. Muir, J. Jay, D. Weston, T. Reddy
Meeting 2: Meeting with CD: Policy	14 Dec 2015	<ul style="list-style-type: none"> <li>overview of the project aims</li> <li>background of the project</li> <li>establish liaison with chief directorate policy</li> </ul>	P. Viljoen, J. Van Wyk, J. Jay, D. Weston, T. Reddy, S. Francis, Marie Brisley and team
Internal Team Meeting: Situation Assessment	13 Jan 2016	<ul style="list-style-type: none"> <li>Update team on progress made</li> <li>High-level review of work/thinking thus far</li> <li>Seek alignment on different tasks in Component 2</li> <li>Outline any project management concerns</li> <li>Discuss avenues for stakeholder engagement</li> <li>Discuss PAC 03 meeting and Stakeholder workshop</li> <li>Map out the next steps</li> </ul>	D. Weston, T. Reddy, G. Pegram, S. Sauka, B. Schreiner, A. Gorgens, N. Rossouw
PAC03	5 <sup>th</sup> Feb 2016	<ul style="list-style-type: none"> <li>To discuss the draft deliverables for Component 2 (Gaps Analysis);</li> <li>To plan for Stakeholder Workshop 01 (17 February 2016);</li> <li>To discuss and agree on the way forward.</li> </ul>	D. Weston, T. Reddy, G. Pegram, A. Gorgens, N. Rossouw, P. Viljoen, J. van Wyk, J. Jay; R. Arnold
Stakeholder Workshop 1	17 <sup>th</sup> Feb 2016	<ul style="list-style-type: none"> <li>To introduce the DWS - IWQMS Project;</li> <li>To provide input into the root cause analysis for WQ issues in South Africa;</li> <li>To provide inputs to the SWOT analysis for WQM in South Africa;</li> <li>To review the gaps in WQM in South Africa and prioritise; and</li> <li>To highlight the way forward.</li> </ul>	Broader Stakeholder Workshop. See attendance register
Internal Team Meeting:	26 <sup>th</sup> Feb 2016	<ul style="list-style-type: none"> <li>Review key findings from the IWQMS Stakeholder Workshop 1;</li> <li>To review and analyse the current policy</li> </ul>	D. Weston, T. Reddy, G. Pegram, S. Goga, B.

MEETING	DATE	PURPOSE	ATTENDANCE
Policy		<ul style="list-style-type: none"> <li>principles;</li> <li>Identify gaps or areas of enrichment for WQM policy;</li> <li>Identify areas of weakness in operationalizing the current policies;</li> <li>Develop the policy principles to take forward for this project; and</li> <li>To highlight the way forward</li> </ul>	Schreiner, A. Gorgens, N. Rossouw, P. Viljoen, J. van Wyk, J. Jay, Mohadi, Tenda, Doris
PAC04	2 <sup>nd</sup> Mar 2016	<ul style="list-style-type: none"> <li>To discuss the way forward for Component 2;</li> <li>To outline the Glossary;</li> <li>To outline the Stakeholder Communication Strategy;</li> <li>To outline the way forward for the Policy Review;</li> <li>To discuss and agree on the way forward.</li> </ul>	D. Weston, T. Reddy, P. Viljoen, J. van Wyk, J. Jay, R. Arnold
Policy Roadmap Discussion	9 <sup>th</sup> Mar 2016	<ul style="list-style-type: none"> <li>Policy Roadmap Discussion to seek alignment</li> </ul>	T. Reddy, P. Viljoen, J. Jay, T. Rasikhanya and Sibusiso
Focus Group 1: Municipalities	7 <sup>th</sup> Mar 2016	<ul style="list-style-type: none"> <li>Discuss the WQ and WQM challenges for the municipal sector.</li> </ul>	M. Rampao, H. Honey, W. Wu, N. Rossouw, A. Görgens
Focus Group 2: Urban Runoff Pollution	11 <sup>th</sup> Mar 2016	<ul style="list-style-type: none"> <li>Discuss the WQ and WQM challenges for the Urban Runoff sector.</li> </ul>	C. Haskins, M. Thompson, R. Arnold, A. Görgens
PMC02	15 <sup>th</sup> Mar 2016	<ul style="list-style-type: none"> <li>To provide an update on progress thus far;</li> <li>To review the key insights from literature;</li> <li>To highlight the development of the WQM Glossary;</li> <li>To review the WQM Challenges;</li> <li>To discuss the development of the Policy Principles;</li> <li>To discuss the IWQMS Stakeholder Consultation and Communication Strategy;</li> <li>To agree on the way forward.</li> </ul>	Please see attendance register
PAC05	6 <sup>th</sup> Apr 2016	<ul style="list-style-type: none"> <li>To finalise the WQ and WQM Challenges Report;</li> <li>to discuss</li> <li>To review the revised WQM Policy Principles;</li> <li>To discuss the draft IWQMS website content;</li> <li>To discuss Newsletter 1;</li> <li>To finalise Quarterly Report 2;</li> <li>To plan for PSC 01;</li> <li>To plan for the large stakeholder engagements; and</li> <li>To discuss and agree on the way forward.</li> </ul>	D. Weston, T. Reddy, P. Viljoen, J. van Wyk, J. Jay, R. Arnold, S. Goga
Finalisation of	11 <sup>th</sup> Apr 2016	<ul style="list-style-type: none"> <li>This was an additional meeting for the DWS team to give comments on the Newsletter, the</li> </ul>	T. Reddy, P. Viljoen, J.



MEETING	DATE	PURPOSE	ATTENDANCE
documents		Policy principles and the Final WQM challenges report.	van Wyk, J. Jay, R. Arnold, S. Goga, B. Schreiner
PSC01	26 <sup>th</sup> Apr 2016	<ul style="list-style-type: none"> <li>To introduce the project, its objectives and progress thus far;</li> <li>To highlight the key insights from literature;</li> <li>To highlight the key Water Quality and Water Quality Management Challenges in SA;</li> <li>To discuss the development of the Policy Principles;</li> <li>To agree on the approval process for the WQM Policy; and</li> <li>To map the way forward.</li> </ul>	Please see attendance register
PAC06	9 <sup>th</sup> May 2016	<ul style="list-style-type: none"> <li>To discuss the development of the WQM Policy;</li> <li>To present the final IWQMS Cover;</li> <li>To finalise Newsletter 1;</li> <li>To discuss the IWQMS FTP site;</li> <li>To plan for the WISA and the roadshows; and</li> <li>To discuss and agree on the way forward.</li> </ul>	J. Jay, J. van Wyk, P. Viljoen, D. Weston, T. Reddy, R. Arnold, S. Goga
WQM Policy Brainstorm	26 <sup>th</sup> May 2016	<ul style="list-style-type: none"> <li>To discuss the Table of Contents of the Policy Document;</li> <li>To discuss the Policy Principles / Statements;</li> <li>To discuss the implications for the Strategy and Implementation;</li> <li>To highlight the way forward.</li> </ul>	L. Mosoa, J. Jay, T. Rasikhanya, G. Pegram, B. Schreiner, T. Reddy, S. Xaba, A. Vermeulen, J. van Wyk, S. Goga, A. Gorgens
PAC07	8 <sup>th</sup> June 2016	<ul style="list-style-type: none"> <li>To discuss the progress on the development of the WQM Policy;</li> <li>To present the final IWQMS cover;</li> <li>To discuss the IWQMS FTP site;</li> <li>To plan for the roadshows; and</li> <li>To discuss and agree on the way forward.</li> </ul>	J. Jay, J. van Wyk, P. Viljoen, D. Weston, T. Reddy, R. Arnold, S. Goga, B. Schreiner
Policy Workshop	14 <sup>th</sup> Jun 2016	<ul style="list-style-type: none"> <li>To report on the project progress;</li> <li>To discuss the draft WQM Policy and its implications on strategy and implementation; and</li> <li>To highlight the way forward.</li> </ul>	Please see attendance register
PMC03	21 <sup>st</sup> Jun 2016	<ul style="list-style-type: none"> <li>To provide an update on progress thus far;</li> <li>To discuss the draft WQM Policy (Edition 1);</li> <li>To interrogate the strategic and implementation implications of the WQM Policy;</li> <li>To agree on the way forward.</li> </ul>	Please see attendance register
Policy Feedback Meeting	21 <sup>st</sup> Jun 2016	<ul style="list-style-type: none"> <li>PAC to provide comments on the WQM Policy</li> </ul>	P Viljoen; J van Wyk; T Reddy; B Schreiner; T Rasikhanya; S Goga; J Jay
PAC08	8 <sup>th</sup> July 2016	<ul style="list-style-type: none"> <li>To discuss the progress on the development of the WQM Policy;</li> </ul>	P Viljoen; J van Wyk; D

MEETING	DATE	PURPOSE	ATTENDANCE
		<ul style="list-style-type: none"> <li>To plan for the roadshows; and</li> <li>To discuss and agree on the way forward.</li> </ul>	Weston; T Reddy; R Arnold; B Schreiner; T Rasikhanya
One-to-one Discussion	19 <sup>th</sup> July 2016	<ul style="list-style-type: none"> <li>To discuss the IWQMS Policy and Strategy</li> </ul>	P Viljoen; T Reddy; S Goga; N Mohapi
PSC02	21 <sup>st</sup> July 2016	<ul style="list-style-type: none"> <li>To report on progress thus far;</li> <li>To present on the revised WQM Policy – Edition 1 and discuss its implications; and</li> <li>To outline the way forward.</li> </ul>	Please see attendance register
PAC09	4 <sup>th</sup> Aug 2016	<ul style="list-style-type: none"> <li>To discuss the finalisation of the WQM Policy;</li> <li>To discuss the Strategic Note;</li> <li>To update the progress for the roadshows; and</li> <li>To discuss and agree on the way forward</li> </ul>	P Viljoen; J van Wyk; J Jay; T Reddy; H Erasmus; B Schreiner;
Meeting with DWS:Policy&Strategy Directorate	11 <sup>th</sup> Aug 2016	<ul style="list-style-type: none"> <li>To discuss inputs into the WQM Policy</li> </ul>	P Viljoen; J van Wyk; J Jay; T Reddy; B Schreiner; M Brisley; T Rasekanya; H Fundzo; Mohadi
One-to-one Discussion	12 <sup>th</sup> Aug 2016	<ul style="list-style-type: none"> <li>To present the progress on the WQM Policy</li> </ul>	P Viljoen; J Jay; T Reddy; B Schreiner; L Mabuda; D Mochotlhi;
Strategy Workshop	26 <sup>th</sup> Aug 2016	<ul style="list-style-type: none"> <li>Provide an update on project progress;</li> <li>Provide an update on the WQM Policy;</li> <li>Describe the process that will be followed to develop the IWQM Strategy;</li> <li>Solicit inputs into the intent, objectives and approach for the IWQM Strategy;</li> <li>Discuss the prioritisation of the key strategic actions for the IWQM Strategy; and</li> <li>Map out the way forward.</li> </ul>	See attendance register
PAC10	5 <sup>th</sup> Sep 2016	<ul style="list-style-type: none"> <li>To discuss the development of the Strategy;</li> <li>To update the progress for the roadshows; and</li> <li>To discuss and agree on the way forward.</li> </ul>	J Jay; J van Wyk ; P Viljoen; D Weston; T Reddy; L Mosoa R Arnold
PMC04	7 <sup>th</sup> Sep 2016	<ul style="list-style-type: none"> <li>To provide an update on project progress thus far;</li> <li>To present the final WQM Policy (Edition 1);</li> <li>To discuss the development of the IWQM Strategy; and</li> <li>To agree on the way forward.</li> </ul>	See attendance register
IWQMS Brainstorm	26 <sup>th</sup> Sep 2016	<ul style="list-style-type: none"> <li>To discuss the strategy direction</li> </ul>	P Viljoen; J Jay; G Grobler; J van Wyk; L Mosoa; G Pegram; D Weston; T Reddy, B Schreiner

MEETING	DATE	PURPOSE	ATTENDANCE
Eastern Cape Capacity Building	11-Oct-2016	<ul style="list-style-type: none"> <li>Provide an introduction to WQ and WQM;</li> <li>Provide insights into the WQM Policy and IWQM Strategy process thus far;</li> <li>Glean WMA contextual insights from Provincial/CMA/proto-CMA staff regarding WQM;</li> <li>Develop an initial understanding of the implementation priorities;</li> <li>Prepare the Provincial/proto-CMA/CMA for the regional workshop;</li> <li>Highlight further opportunities for capacity building; and</li> <li>Outline the way forward.</li> </ul>	See attendance register
Eastern Cape Regional Workshop	12-Oct-2016	<ul style="list-style-type: none"> <li>To create awareness regarding the WQM Policy and the IWQM Strategy;</li> <li>To obtain comments and inputs into the WQM Policy and the IWQM Strategy;</li> <li>To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;</li> <li>To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and</li> <li>To outline the way forward.</li> </ul>	See attendance register
Free State Capacity Building	13-Oct-2016	<ul style="list-style-type: none"> <li>Provide an introduction to WQ and WQM;</li> <li>Provide insights into the WQM Policy and IWQM Strategy process thus far;</li> <li>Glean WMA contextual insights from Provincial/CMA/proto-CMA staff regarding WQM;</li> <li>Develop an initial understanding of the implementation priorities;</li> <li>Prepare the Provincial/proto-CMA/CMA for the regional workshop;</li> <li>Highlight further opportunities for capacity building; and</li> <li>Outline the way forward.</li> </ul>	See attendance register
Free State Regional Workshop	14-Oct-2016	<ul style="list-style-type: none"> <li>To create awareness regarding the WQM Policy and the IWQM Strategy;</li> <li>To obtain comments and inputs into the WQM Policy and the IWQM Strategy;</li> <li>To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;</li> <li>To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and</li> <li>To outline the way forward.</li> </ul>	See attendance register
Northern Cape Capacity Building	17-Oct-2016	<ul style="list-style-type: none"> <li>Provide an introduction to WQ and WQM;</li> <li>Provide insights into the WQM Policy and IWQM Strategy process thus far;</li> <li>Glean WMA contextual insights from Provincial/CMA/proto-CMA staff regarding WQM;</li> <li>Develop an initial understanding of the implementation priorities;</li> <li>Prepare the Provincial/proto-CMA/CMA for the regional workshop;</li> <li>Highlight further opportunities for capacity</li> </ul>	See attendance register

MEETING	DATE	PURPOSE	ATTENDANCE
		<ul style="list-style-type: none"> <li>building; and</li> <li>Outline the way forward.</li> </ul>	
Northern Cape Regional Workshop	18-Oct-2016	<ul style="list-style-type: none"> <li>To create awareness regarding the WQM Policy and the IWQM Strategy;</li> <li>To obtain comments and inputs into the WQM Policy and the IWQM Strategy;</li> <li>To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;</li> <li>To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and</li> <li>To outline the way forward.</li> </ul>	See attendance register
North West Capacity Building	20-Oct-2016	<ul style="list-style-type: none"> <li>Provide an introduction to WQ and WQM;</li> <li>Provide insights into the WQM Policy and IWQM Strategy process thus far;</li> <li>Glean WMA contextual insights from Provincial/CMA/proto-CMA staff regarding WQM;</li> <li>Develop an initial understanding of the implementation priorities;</li> <li>Prepare the Provincial/proto-CMA/CMA for the regional workshop;</li> <li>Highlight further opportunities for capacity building; and</li> <li>Outline the way forward.</li> </ul>	See attendance register
Kwa Zulu Natal Capacity Building	24-Oct-2016	<ul style="list-style-type: none"> <li>Provide an introduction to WQ and WQM;</li> <li>Provide insights into the WQM Policy and IWQM Strategy process thus far;</li> <li>Glean WMA contextual insights from Provincial/CMA/proto-CMA staff regarding WQM;</li> <li>Develop an initial understanding of the implementation priorities;</li> <li>Prepare the Provincial/proto-CMA/CMA for the regional workshop;</li> <li>Highlight further opportunities for capacity building; and</li> <li>Outline the way forward.</li> </ul>	See attendance register
Kwa Zulu Natal Regional Workshop	25-Oct-2016	<ul style="list-style-type: none"> <li>To create awareness regarding the WQM Policy and the IWQM Strategy;</li> <li>To obtain comments and inputs into the WQM Policy and the IWQM Strategy;</li> <li>To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;</li> <li>To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and</li> <li>To outline the way forward.</li> </ul>	See attendance register
Gauteng Capacity Building	27-Oct-2016	<ul style="list-style-type: none"> <li>Provide an introduction to WQ and WQM;</li> <li>Provide insights into the WQM Policy and IWQM Strategy process thus far;</li> <li>Glean WMA contextual insights from Provincial/CMA/proto-CMA staff regarding WQM;</li> <li>Develop an initial understanding of the implementation priorities;</li> <li>Prepare the Provincial/proto-CMA/CMA for the</li> </ul>	See attendance register

MEETING	DATE	PURPOSE	ATTENDANCE
		<ul style="list-style-type: none"> <li>regional workshop;</li> <li>Highlight further opportunities for capacity building; and</li> <li>Outline the way forward.</li> </ul>	
Gauteng Regional Workshop	28-Oct-2016	<ul style="list-style-type: none"> <li>To create awareness regarding the WQM Policy and the IWQM Strategy;</li> <li>To obtain comments and inputs into the WQM Policy and the IWQM Strategy;</li> <li>To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;</li> <li>To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and</li> <li>To outline the way forward.</li> </ul>	See attendance register
Mpumalanga Capacity Building	31-Oct-2016	<ul style="list-style-type: none"> <li>Provide an introduction to WQ and WQM;</li> <li>Provide insights into the WQM Policy and IWQM Strategy process thus far;</li> <li>Glean WMA contextual insights from Provincial/CMA/proto-CMA staff regarding WQM;</li> <li>Develop an initial understanding of the implementation priorities;</li> <li>Prepare the Provincial/proto-CMA/CMA for the regional workshop;</li> <li>Highlight further opportunities for capacity building; and</li> <li>Outline the way forward.</li> </ul>	See attendance register
Mpumalanga Regional Workshop	01-Nov-2016	<ul style="list-style-type: none"> <li>To create awareness regarding the WQM Policy and the IWQM Strategy;</li> <li>To obtain comments and inputs into the WQM Policy and the IWQM Strategy;</li> <li>To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;</li> <li>To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and</li> <li>To outline the way forward.</li> </ul>	See attendance register
Limpopo Capacity Building	03-Nov-2016	<ul style="list-style-type: none"> <li>Provide an introduction to WQ and WQM;</li> <li>Provide insights into the WQM Policy and IWQM Strategy process thus far;</li> <li>Glean WMA contextual insights from Provincial/CMA/proto-CMA staff regarding WQM;</li> <li>Develop an initial understanding of the implementation priorities;</li> <li>Prepare the Provincial/proto-CMA/CMA for the regional workshop;</li> <li>Highlight further opportunities for capacity building; and</li> <li>Outline the way forward.</li> </ul>	See attendance register
Limpopo Regional Workshop	04-Nov-2016	<ul style="list-style-type: none"> <li>To create awareness regarding the WQM Policy and the IWQM Strategy;</li> <li>To obtain comments and inputs into the WQM Policy and the IWQM Strategy;</li> <li>To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;</li> </ul>	See attendance register

MEETING	DATE	PURPOSE	ATTENDANCE
		<ul style="list-style-type: none"> <li>To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and</li> <li>To outline the way forward.</li> </ul>	
Western Cape Capacity Building	08-Nov-2016	<ul style="list-style-type: none"> <li>Provide an introduction to WQ and WQM;</li> <li>Provide insights into the WQM Policy and IWQM Strategy process thus far;</li> <li>Glean WMA contextual insights from Provincial/CMA/proto-CMA staff regarding WQM;</li> <li>Develop an initial understanding of the implementation priorities;</li> <li>Prepare the Provincial/proto-CMA/CMA for the regional workshop;</li> <li>Highlight further opportunities for capacity building; and</li> <li>Outline the way forward.</li> </ul>	See attendance register
Western Cape Regional Workshop	09-Nov-2016	<ul style="list-style-type: none"> <li>To create awareness regarding the WQM Policy and the IWQM Strategy;</li> <li>To obtain comments and inputs into the WQM Policy and the IWQM Strategy;</li> <li>To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;</li> <li>To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and</li> <li>To outline the way forward.</li> </ul>	See attendance register
North West Regional Workshop	18-Nov-2016	<ul style="list-style-type: none"> <li>To create awareness regarding the WQM Policy and the IWQM Strategy;</li> <li>To obtain comments and inputs into the WQM Policy and the IWQM Strategy;</li> <li>To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;</li> <li>To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and</li> <li>To outline the way forward.</li> </ul>	See attendance register
PMC 05	30-Nov-2016	<ul style="list-style-type: none"> <li>To provide an update on project progress thus far;</li> <li>To Provide feedback from provincial workshops on policy, strategy and key issues for implementation;</li> <li>Outline the Capacity Building needs based on Provincial inputs;</li> <li>Discuss the WQM function and structuring process; and</li> <li>To agree on the way forward.</li> </ul>	See attendance register
PAC 12	05-Dec-2016	<ul style="list-style-type: none"> <li>To discuss the insights from the Provincial and National Workshops;</li> <li>To discuss the broader Capacity Building needs;</li> <li>To discuss the WQM Function;</li> <li>To present the IWQMS Newsletter 3: Strategy; and</li> <li>To discuss and agree on the way forward.</li> </ul>	See attendance register

MEETING	DATE	PURPOSE	ATTENDANCE
PSC 3	09-Dec-2016	<ul style="list-style-type: none"> <li>To provide an update on project progress thus far;</li> <li>To provide an overview of Edition 1 of the IWQM Strategy;</li> <li>To provide feedback from workshops (provincial and national) on policy, strategy and key issues for implementation;</li> <li>Discuss the Note on the WQM function; and</li> <li>To agree on the way forward</li> </ul>	See attendance Register
Policy and Strategy Alignment Workshop	19-Jan-2017	<ul style="list-style-type: none"> <li>Introduce the initiative to revise South Africa's WQM Policy and develop an IWQM Strategy</li> <li>Provide an overview of the main outcomes and implications of the IWQM Strategy</li> <li>Determine how to collaboratively support the IWQM Strategy</li> <li>Discuss the modalities for establishing an inter-departmental WQM approach</li> <li>Map the way forward.</li> </ul>	See attendance register
National Inter-Departmental Workshop	10-Feb-2017	<ul style="list-style-type: none"> <li>Introduce the initiative to revise SA's WQM Policy and develop an IWQM Strategy;</li> <li>Provide an overview of the main outcomes and implications of the IWQM Strategy;</li> <li>Determine how to collaboratively support the IWQM Strategy;</li> <li>Discuss the modalities for establishing an Inter-Departmental WQM approach; and</li> <li>Map the way forward.</li> </ul>	See attendance register
Focus Group meeting with National Treasury	21-Feb-2017	<ul style="list-style-type: none"> <li>To inform you of the WQM Policy and IWQM Strategy;</li> <li>To discuss collaboration and alignment;</li> <li>To discuss implications for implementation; and</li> <li>Map the way forward.</li> </ul>	See attendance register
Policy Review Meeting	27-Feb-2017	<ul style="list-style-type: none"> <li>Provide inputs to the Policy</li> </ul>	See attendance register
Strategy Review Meeting	06-Mar-2017	<ul style="list-style-type: none"> <li>Provide inputs to the Strategy</li> </ul>	See attendance register
PAC 13 Meeting	22-Mar-2017	<ul style="list-style-type: none"> <li>To state progress on finalisation of the IWQM Policy and Strategy;</li> <li>To discuss the Implementation Plan;</li> <li>To discuss the future engagements;</li> <li>To outline the way forward.</li> </ul>	See attendance register
Combined PMC & PSC Meeting	30-Mar-2017	<ul style="list-style-type: none"> <li>To provide a high-level overview of the IWQM Policy &amp; Strategy;</li> <li>Present Draft Implementation plan;</li> <li>Overview of IWQMS Symposium and</li> <li>To outline the way forward.</li> </ul>	See attendance register
PAC 14	12-May-2017	<ul style="list-style-type: none"> <li>To discuss the Symposium</li> <li>To discuss the M&amp;E Note</li> <li>To discuss the progress on the Implementation Plan</li> </ul>	See attached register
National Symposium	31-May-2017	<ul style="list-style-type: none"> <li>To create awareness of the IWQM Policy and Strategy;</li> </ul>	See attached register



MEETING	DATE	PURPOSE	ATTENDANCE
		<ul style="list-style-type: none"> <li>To share innovative experiences that can support IWQM; and</li> <li>To enable discussions about aspects that require coordination towards strengthening approaches to IWQM.</li> </ul>	
PAC15	09-Jun-2017	<ul style="list-style-type: none"> <li>Feedback from Symposium</li> <li>Newsletter 4</li> <li>M&amp;E</li> <li>Final Literature Reports and Implementation Plan</li> <li>To Plan for the upcoming PMC/PSC Meeting</li> </ul>	See attendance register
Combined PMC & PSC Meeting	26-Jun-2017	<ul style="list-style-type: none"> <li>To provide an overview of IWQMS Symposium and the findings from the symposium,</li> <li>To present and discuss Implementation plan in preparation for finalisation,</li> <li>To present and discuss the Monitoring &amp; Evaluation Note towards the development of the M &amp; E Framework, and</li> <li>To outline the way forward.</li> </ul>	See attendance register
Document Review Meeting	28-Jun-2017	<ul style="list-style-type: none"> <li>review the 3 literature review documents</li> </ul>	See attendance register
PAC 16	20-Jul-2017	<ul style="list-style-type: none"> <li>M&amp;E Framework, OD, Stakeholder Report, Technical Close-out Report, Summary Brochure</li> </ul>	See attendance register
Implementation Phase Brainstorming Session	20-Jul-2017	<ul style="list-style-type: none"> <li>Implementation Plan Brainstorming</li> </ul>	See attendance register
Capacity Building Training	14-17-Aug-2017	<ul style="list-style-type: none"> <li>Capacity Building of DWS and CMA WQM Champions (4-6 representatives per province)</li> </ul>	See attendance register
Document Review Meeting	06-Sep-2017	<ul style="list-style-type: none"> <li>Implementation Plan &amp; Organisational Design Review</li> </ul>	See attendance register
PAC 17	19-Sep-2017	<ul style="list-style-type: none"> <li>Policy and Strategy Brochures and Technical Close out Report discussions</li> </ul>	See attendance register
Document Review Meeting	19-Sep-2017	<ul style="list-style-type: none"> <li>Monitoring and Evaluation Framework Review</li> </ul>	See attendance register



## **APPENDIX C: STAKEHOLDER DATABASE**

The database is a compilation of the names and contact details of the stakeholders that were invited, and attended the various project committee meetings, workshops, focus group meetings and other events and to whom communication was sent regarding the project (including those who registered on the DWS Website). Both a consolidated list as well as lists of representatives per event are contained in this database.

\* The stakeholder database is provided separately, as an excel spread sheet.



## **APPENDIX D: PROCEEDINGS OF KEY STAKEHOLDER ENGAGEMENTS**

## **APPENDIX D-1**

### **PRODUCT DEVELOPMENT WORKSHOPS**



## DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS)

WP10978

### IWQMS Stakeholder Workshop: 01

17 February 2016 | Protea Hotel Centurion, Hendrik Verwoerd Drive, Centurion | 09h00 – 16h00

#### AGENDA

**Chairperson:** Dr. B. Mwaka/Mr. P. Viljoen

**Purpose of Workshop:**

- To introduce the DWS - IWQMS Project;
- To provide input into the root cause analysis for WQ issues in South Africa;
- To provide inputs to the SWOT analysis for WQM in South Africa;
- To review the gaps in WQM in South Africa and prioritise; and
- To highlight the way forward.

Item	Time	Topic	Responsible
1	09h00 - 9h30	Arrival Tea and Coffee	
	09h30 – 09h40	Welcome, Introductions and Purpose of the Workshop	Chair
2	09h40 – 09h55	Introduction to the Project <ul style="list-style-type: none"><li>▪ <i>Events leading to the project</i></li><li>▪ <i>Evolution of WQM in South Africa</i></li><li>▪ <i>Project components and timeframes</i></li></ul>	DWS Project Manager
3	09h55 – 10h00	Workshop Aims and Approach <ul style="list-style-type: none"><li>▪ <i>Discussion on how the day's components fit together in the bigger picture</i></li></ul>	Facilitator: G. Pegram
4	10h00 – 10h20	Introduction to WQ Issues and Root Cause Analysis <ul style="list-style-type: none"><li>▪ <i>WQ issues</i></li><li>▪ <i>Mapping of knowledge vs impact</i></li><li>▪ <i>High-level root cause analysis (key findings)</i></li></ul>	A. Görgéns/ N. Rossouw



# water & sanitation

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA

5	10h20 – 10h40	Insights from International Experience	G. Pegram
6	10h40 – 11h00	Discussion and clarification	All
7	11h00 – 12h30	<b>Workshop 1: WQM SWOT Analysis (working tea)</b>	
	11h00 – 11h05	▪ <i>Short introduction to workshop</i>	<i>Facilitator: A. Görgéns</i>
	11h05 – 12h15	▪ <i>SWOT Discussion</i>	<i>All</i>
	12h15 – 12h30	▪ <i>Feedback session</i>	<i>Facilitator: A. Görgéns</i>
	12h30 – 13h15	Lunch	
8	13h15 – 15h20	<b>Workshop 2: World Café - Root Causes of WQ Challenges</b>	
	13h15 – 13h20	▪ <i>Introduction to Workshop</i>	<i>Facilitator: T. Reddy</i>
	13h20 – 15h20	▪ <i>Table Rotation</i>	
		○ <i>Municipalities</i>	<i>D. Weston/P. Viljoen</i>
		○ <i>Urban washoff</i>	<i>A. Görgéns/J. Jay</i>
		○ <i>Mining</i>	<i>G. Pegram/J. van Wyk</i>
		○ <i>Industry</i>	<i>N. Rossouw/G. Grobler</i>
		○ <i>Agriculture</i>	<i>B. Schreiner/L. Mosoa</i>
	15h20 – 15h35	Tea break	
9	15h35 – 15h50	Summary and Feedback	Facilitator: G. Pegram
		▪ <i>Collation of workshop outputs</i>	
10	15h50 – 16h00	Way Forward and Closure	Chair

**DEPARTMENT OF WATER AND SANITATION (DWS)**  
**DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY**  
**(IWQMS)**

**PROCEEDINGS OF IWQMS STAKEHOLDER WORKSHOP 01**

**Date:** 17 February 2016  
**Time:** 09:30 to 16:00  
**Venue:** Protea Hotel, Hendrik Verwoerd Drive, Centurion

**WELCOME, INTRODUCTIONS AND PURPOSE OF WORKSHOP**

Mr Viljoen welcomed everyone to the workshop and invited a round of introductions. Participants were reminded to sign the attendance register.

This was the first of many engagements on this project. The purpose of this meeting was to:

- Introduce the DWS-IWQMS project
- Provide input into the root cause analysis for water quality issues in South Africa
- Provide inputs to the SWOT analysis for water quality management in South Africa
- Highlight the way forward.

Dr Mwaka, Director of Water Resource Planning at DWS, was ultimately responsible for the project.

**INTRODUCTION OF THE IWQMS PROJECT (PIETER VILJOEN)**

This was a high level project in DWS, with anticipation of considerable contributions from stakeholders.

**Water Quality (WQ) and Water Quality Management (WQM) Challenges**

In 2010/11 an assessment of the national state of WQ was undertaken by the Department of Water Affairs looking at the 330 priority monitoring points on the national chemical database. Only 17% of all sites assessed complied with all the Water Quality Objectives. Of particular concern were the nutrients and salts, which presented a problem throughout much of South Africa.

Reports of WQ issues and concerns about pollution of rivers appeared in the media with increasing frequency. The National Water Resource Strategy (NWRS) referred to poorly treated discharges from wastewater treatment works, run-off from un-serviced areas, agricultural run-off, industrial wastewater discharges and mining impacts. Some of the perceived water quality management issues relate to:

- Lack of adequate water quality monitoring and reporting
- Lack of adequate water quality planning
- Lack of compliance enforcement
- Lack of infrastructure maintenance
- Lack of policy implementation
- Lack of sufficient capacity
- Lack of standardised practices
- Lack of sufficient communication (between public and government departments) and co-operative governance
- Leadership, integration and funding.

### **Current WQM approach followed in DWS**

The National Water Act (NWA) provides for the protection of water resources. The responsibility to manage our water resources includes the responsibility to protect the users of water resources, which in turn requires protection of water resources. Protection of a water resource means:

- The maintenance of the quality of the water resource to the extent that the water resource may be used in an ecologically sustainable way
- The prevention of the degradation of the water resource
- The rehabilitation of the water resource.

Water resource policy implementation by DWS is structured as follows:

- Resource-directed measures: Defining a desired level of protection for a water resource, the Class, Reserve, RQO, planning and water quality allocation plans
- Source-directed controls: Controlling impacts on the water resource through the use of regulatory measures such as registration, permits, directives, prosecution and economic incentives such as levies and fees
- Managing demands on water resources in order to keep utilisation within the limits required for protection
- Monitoring the status of the country's water resources on a continual basis.

The decision taking hierarchy in relation to water use is described under Section 27(1) of the NWA 36:1998 and needs to be considered before any water use can be authorised by the responsible authority, as does the Water Resource Management (WRM) Framework (2006) addressing Resources Directed Measures for Water Quality (RDMWQ).

### **Project goal**

The project goal is to develop a WQM Policy, IWQM Strategy and instruments to convert policy into practice that is progressive, implementable and practical and that provides clear guidance to the department and the larger water sector. Policy must address the effective, sustainable and integrated management of surface and ground water quality, facilitate the attainment of the desired level of water resource protection and use, and support executive policies and strategies, such as the 1997 White Paper, NWRS2 and National Development Plan (NDP).

WQM policy and strategy must be based on the improvement, integration and alignment of existing policies and strategies. To achieve IWQM it will be important to align water resource and water sanitation frameworks (catchment to consumer to catchment concept), and cognisance must be taken of water sanitation strategic frameworks and developments.

The implementation component is the most important part of the project, as it is essential to ensure that targets are met and a difference is made on the ground.

### **Key considerations**

The WQM policy and strategy will have to address all aspects of WQM, including planning, protection, regulation, monitoring and information management, institutional requirements and sanitation linkages.

There is a great deal of public and political interest in this project. Some project outcomes are focused only at DWS and its institutions, and others must inform both DWS and the larger water sector. The project is required to produce not only a policy, strategy and plan for the future management of resource WQ for DWS, but should also address implementation and monitoring and evaluation of the plan. In addition, integration needs to take place at various levels, namely:

- Decision making (e.g. for Integrated Land-Water-Atmosphere management)
- Aligned and co-operative functions and structures for WQM
- Monitoring and reporting (e.g. Water Quality-Quantity-Ecosystem and Human Health)
- Between WRM and Water Services.



## **Policy approach**

Edition 1 of the WQM Policy, IWQM Strategy and implementation plan would be deliberated through a stakeholder engagement process in order to finalise the WQM Policy, IWQM Strategy and implementation plan by 2017.

## **Questions/comments**

- Mr Fred van Zyl pointed out that DWS had to report on the targets set by the Sustainable Development Goals (SDGs) and was interested in how the project would provide input to the intervention plan and respond to the SDG targets. The objective of the project was to convert policy into practice, but clarity was needed as to how this would be achieved, as no clear targets and deadlines have been set. He emphasised that the project would have contribute towards meeting international and national targets and avoid the production of yet another report or policy as this would serve no purpose.

Mr Viljoen reiterated the importance of the implementation component (in the form of Terms of Reference for a plan of action) of the project and gave assurance that project team had noted the matter raised by Mr van Zyl.

- As WQM policies and strategies are already in place, the project team should review the existing policies to find the gaps rather than starting the process from the beginning to develop a new policy.

Mr Viljoen indicated that the project would not begin WQM policy and strategy development anew. The review of existing policies was an important component of the project and the gaps would be prioritised in the implementation plan.

- Prof. Palmer pointed out that much of what was presented had been heard before. A shift to a conscious systemic approach with implementation at an appropriate scale was not evident in the project.

Mr Viljoen responded that a systemic approach had been adopted for this project.

- The gaps in policies referred more to lessons learnt than to institutional arrangements. The latter need to be addressed in order to make implementation of the policy possible.

Mr Viljoen pointed out that DWS institutional arrangements were affected by the lengthy restructuring exercise. It was understood that a recent initiative would address the finalisation of the structure of the department. One of the tasks on this project was to feed into that initiative in terms of the functional, structural and institutional aspects of the department to deal with WQ more efficiently.

Dr Pegram added that part of the process will be to identify why the current policies and strategies have not worked and systemically address how to change or rethink the strategy or the implementation plan. The policy needs to reflect the ability to implement.

## **WORKSHOP AIMS AND APPROACH (GUY PEGRAM, NICO ROSSOUW AND ANDRE GÖRGENS)**

The project had passed through the inception phase and was currently in the beginning of the assessment phase, which had several elements. The gap analysis (looking at focus, priorities and understanding the underlying causes) would form the policy and how the existing policies need to be refined or revised. This process would lead to the strategy. The IWQM implementation plan (addressing not only actions but also roles, responsibilities, alignment, monitoring, organisational development, capacity building and achievability in the South Africa reality) was the final part of the process that informs the policy and strategy.

This workshop addressed the elements of the assessment phase, namely:

- High-level description and prioritisation of WQ issues. The intended outcome was to achieve consensus on prioritised WQ issues.

- Root cause analysis, insights from international experience and a WQM SWOT analysis. The intended outcome was the identification of WQM challenges and gaps.
- Consolidation and way forward. The intended outcome was a foundation for policy, strategy processes.

Workshop participants were invited to comment on the (draft) report, *Water Quality and Water Quality Management Challenges in South Africa (January 2016)*, which identified and described the main WQ concerns, reviewed the geographic extent, prioritised and identified root causes of priority issues, and identified and described future trends and the relevant water impacts.

WQ challenges identified were:

- Salinisation
- Nutrient enrichment and eutrophication
- Acidification and acid mine drainage
- Alkalinity
- Erosion and sedimentation
- Urban runoff pollution, litter and solid waste
- Microbial pollution, waterborne pathogens and human health
- Agrochemicals and toxic substances
- Dissolved oxygen and organic pollution
- Trace metals
- Hydrocarbon pollution
- Thermal pollution
- Nanoparticles
- Radioactivity.

The spatial distribution and geographical prevalence of the various WQ challenges was not necessarily a reflection of the severity of impact. A systematic process was followed to ascertain the geographical prevalence, the quality of the information available, the level of monitoring, and the level of scientific and technical understanding about the causes and severity of impacts of the WQ challenges. Five of the WQ challenges nationally (eutrophication, salinisation, sedimentation, acidification and urban pollution) were shown to fall within the realm of high levels of knowledge and understanding, high impact and high severity of impact, and were therefore prioritised on a national level for purposes of root cause analysis. Prioritisation of WQ challenges would have to be developed for every part of the country.

The outcome of the root cause analyses of the five primary WQ challenges in the country was summarised as follows:

Primary drivers	Root causes
<b>Eutrophication</b>	
1) Municipal sewage discharges and overflows	<ul style="list-style-type: none"> <li>• A notable degree of dysfunction in many municipalities due to a range of institutional, technical/management incapacity, financial and political reasons.</li> <li>• Poor cooperative governance and inadequate cross-regulatory interfaces with DWS.</li> </ul>
2) Diffuse nutrient loadings from cultivated land	<ul style="list-style-type: none"> <li>• Inappropriate fertiliser, tillage and land management practices</li> <li>• Poor cooperative governance and inadequate cross-regulatory interfaces with DWS.</li> </ul>
<b>Acidification and Acid Mine Drainage</b>	
1) Discharge of acidified groundwater from mines.	<ul style="list-style-type: none"> <li>• Historical and recent lack of precautionary planning, regulation and enforcement.</li> <li>• Poor cooperative governance and inadequate cross-regulatory interfaces with DWS.</li> </ul>

2) Contaminated seepage, runoff and spills - mines and coal-fired power stations	<ul style="list-style-type: none"> <li>• Lack of compliance with licence conditions; inappropriate licence conditions; inadequate enforcement capacity.</li> <li>• Poor cooperative governance and inadequate cross-regulatory interfaces with DWS.</li> </ul>
3) Wash-off and leaking of acidic atmospheric deposits stemming from smoke-stack emissions.	<ul style="list-style-type: none"> <li>• Inappropriate license conditions; lack of monitoring and reporting of own pollution loads; lack of enforcement.</li> <li>• Poor cooperative governance and inadequate cross-regulatory interfaces with DWS.</li> </ul>
<b>Salinisation</b>	
1) Diffuse drainage and wash-off of rainfall-mobilised natural salts in dryland-cultivated soils, as well as diffuse sub-surface irrigation return flows	<ul style="list-style-type: none"> <li>• Inappropriate dry-land tillage and crops, over-irrigation, inappropriate irrigation technology, lack of intercepting drainage and related evaporation ponds.</li> <li>• Poor cooperative governance and inadequate cross-regulatory interfaces with DWS.</li> </ul>
2) Acid mine drainage and acidic atmospheric deposits	Refer to primary driver: Acidification and Acid Mine Drainage
<b>Urban Runoff Pollution</b>	
1) Stormwater runoff from formalised pervious and impervious urban areas or sewer overflows into stormwater conduits	<ul style="list-style-type: none"> <li>• Inadequate implementation of best management land-use practices and a notable degree of dysfunction in relevant municipalities.</li> </ul>
2) Stormwater runoff from less-formalised dense human settlements, including direct disposal of domestic refuse, grey water, seepage from latrines and human and animal excrement, as well as sewer overflows	<ul style="list-style-type: none"> <li>• Notable degree of dysfunction in relevant municipalities and inadequate implementation of best management land-use practices.</li> <li>• Poor cooperative governance and inadequate cross-regulatory interfaces with DWS.</li> </ul>
<b>Sedimentation</b>	
1) Anthropogenically-driven erosion of surface soils of catchments and of stream/river banks through poor land management activities where soils are erodible or by in-stream and riparian disturbance	<ul style="list-style-type: none"> <li>• Inappropriate crop cultivation and silviculture practices; over-grazing; destruction of riparian vegetation buffer zones; destruction of wetlands; physical modification of river channels and banks; less-formalised dense human settlements; careless construction activities.</li> <li>• Poor cooperative governance and inadequate cross-regulatory interfaces with DWS.</li> </ul>

## INSIGHTS FROM INTERNATIONAL EXPERIENCE (GUY PEGRAM)

The international review did not look at the regulation of WQ in other countries as this type of analysis has been done extensively and underpins the current policy and strategy. It is important to note that South African policies and strategies are advanced in terms of international practice. The international review, although not intended to be comprehensive, aimed to assess how WQ and WQM challenges have been addressed in various countries, particularly focusing on emerging or innovative approaches. The project's description was to have an ongoing international review that is updated with the move towards implementation. This living literature review would be published at the end of the process.

The review looked at how catchment management and WQM at a basin or catchment level were addressed, the key instruments and how these were used to address WQ problems. The review also looked at how innovative partnerships support WQM. The study covered a range of developed as well as developing countries. Good water quality is the foundation for achieving the several of the SDGs and further drives the need for an integrated WQM policy and strategy for South Africa.

Evidence of strategic alignment observed in many of the cases studied was as follows:

- Water quality problems are increasingly shifting to non-point source (NPS) related to failing or inadequate infrastructure.
- WQM is a long-term problem requiring institutional capacity and financial sustainability, within broader water resources management.
- Water resources crises provide opportunities to gain political will and momentum, which needs to be sustained.
- Catchment WQ management requires a combination of technical, regulatory, economic, financial and institutional interventions.
- Influencing government financing mechanisms provides a critical means of enabling WQ action.
- The SDG indicator process provides an opportunity to address WQ issues.

Alignment cases looked at in the study included:

- Cleaning up the Ganga, India
- Restoration of the Rhine
- Salinity management in the Murray Darling
- Salinity management in the Indus.

Regulatory through to financial instruments included:

- Regulatory and strategic approaches are increasingly focusing on minimising pollution by being stringent on priority sectors.
- Clean tech supported by green economy initiatives and financing mechanisms provides targeted ways of reducing pollution at source.
- Coherent regulatory regimes and strategic institutional approaches supported by appropriate financial mechanisms and cooperative actions.
- Natural (green) infrastructure is recognised as critical aspect of integrated management of water quality in urban and rural settings.
- Various economic (and financial) approaches have been attempted, the selection of which should depend on the individual context and may be targeted.
- Good water quality monitoring enables enforcement and compliance, but this can be incrementally developed and funded.

Instruments used in the Danube nitrate management and mining rehabilitation (China, Canada, Australia) cases were observed.

In terms of funding the WQ and economic instruments in different parts of the world, it was found that the state tends to underwrite and then try to find the finance, an explicit recognition of government's responsibility. Instruments used internationally included:

- Waste discharge charges (Columbia): Charging systems, regulatory systems, protection, intervention and restoration were all part of one process and not separate instruments.
- Pesticide tax in Denmark: Eco-taxation applied to the agriculture sector.
- Water abstraction charge in the Baltic countries: Key principles such as the polluter-pays-principle, the adaptation to the vulnerability of water resources (tax levels being differentiated by sources of water), and the search for increasing water efficiency.
- Pollution charges for direct discharge of wastewater in Germany
- Abstraction charges in the Seine-Normandie River Basin (France)
- Environmental endowment funds.

In terms of partnerships, it was observed that:

- Government needs to play a lead role in driving, coordinating and often financing the remediation, and is not merely manage water quality.
- Building long-term partnerships is fundamental to long-term solutions.
- Basin institutions take the lead in catchment rehabilitation and protection through a range of rural and urban measures.

- Alignment and consistency is an emerging challenge that requires cooperative governance and regulatory/strategic approaches.
- The private sector has a crucial role to play in minimising its impacts on water resources and collaborating through stewardship partnerships.

Rehabilitation of the Mersey in the UK required a long-term commitment from government through a partnership with the private sector (dischargers), a local stakeholder platform, substantial innovative input as well as fiscal support and in-kind contributions. Flood and WQ in Porto Alegre in Brazil were addressed through inter-government co-operations, coherent land-use planning and non-conventional approaches, guided by adaptive management.

Various stewardship efforts have been initiated by various companies, often in partnership with government or non-governmental organisations across the global, through payment for environmental schemes, trusts, initiatives in terms of promoting clean tech. Some examples are:

- Collective Action for Groundwater Sustainability: SABMiller in Lima, Peru
- Collaborating for Erosion Management: SABMiller in Honduras
- Basin Stewardship by WWF: The Buyuk Menderes Basin, the Ganga Basin, the Taihu Basin
- Coca-Cola involvement in the Latin American Water Funds Partnership
- Horticulture in Lake Naivasha, Kenya.

### Questions/Comments

- 1) Prof. Palmer asked whether the project team used interface of quantity and quality and load and dilution as an upfront integrator or as a root cause component.

Mr Görgens responded that in the past, quality and quantity were viewed in a dualistic manner. Dilution is a very important component of WQM. Water load allocation must form part of this. The implementation plan would have to revisit how this would be approached from a licensing perspective. The project team would note this point.

- 2) How important is the prioritisation of the WQ challenges in the current process, particularly as it would have to be repeated on a more detailed geographic scale? The challenges would also have to be addressed as temporal.

Mr Görgens explained that a root cause analysis could not be done for all the identified challenges as part of this project, partly because the WQ constituents that signal that there is an issue have not been monitored. For example, until there is clarity about whether nanoparticles are an issue, they will not be monitored. A national WQ assessment study was not being done.

Mr Viljoen added that the aim is to identify the WQ problems in the country and whether DWS is in a position to deal with them. There was awareness about the necessity to do WQ assessments at catchment level and address catchment specific issues. The current project looked at WQ priorities nationally.

- 3) Mr Viljoen pointed out that the WQ challenges have been the focus of discussions over many years, yet not much had changed. It was essential to find innovative ways to addressing these issues to ensure that the current situation improves.
- 4) Mr Selepe mentioned that a further WQ challenge related to hormone levels in water and suggested that a short-term project should be initiated to identify the extent of the problem nationally.

Mr Viljoen pointed out that several current Water Research Commission (WRC) projects were addressing this particular WQ problem. The policy could not be silent on this matter. The strategy needs to talk to issues such as this to ensure that WQM interventions are made.

### WORKSHOP 1: WQM SWOT ANALYSIS (FACILITATOR: ANDRE GÖRGENS)

Mr Görgens introduced the workshop, explaining that a project team member would be allocated to each table, which represented a working group, to act as facilitator and rapporteur. The groups would discuss the first-cut SWOT analysis that had been done by the project team. The SWOT analysis looked at the strengths and weaknesses of DWS internally in terms of WQM and its related component, and opportunities and threats taken from the perspective of the environment external to DWS. Participants were invited to add their perspective to both the aspects internal to DWS as well as those external to DWS.

## **WORKSHOP 2: ROOT CAUSES OF WQM CHALLENGES (FACILITATOR: GUY PEGRAM)**

Each of the key sectors that are causing WQ problems have their own inherent root causes of those problems. Participants were invited to join in discussing the root causes within each of five sectors: municipalities, urban wash-off, mining, industry and agriculture.

The world café process was explained. Each table was allocated a topic and an anchor (the person facilitating the tables' discussions). The facilitator would introduce the topic for discussion and the groups would offer input on the key underlying causes of WQ problems. Participants would circulate from table to table and be briefed on previous groups' discussions by the relevant facilitator. Each participant was therefore provided the opportunity to agree or disagree with another group's comments or input and to add their own points to the discussion on the root causes within all of the five sectors.

## **SUMMARY AND FEEDBACK (FACILITATOR: GUY PEGRAM)**

Mr Pegram thanked participants for their enthusiastic engagement in the group discussions. He emphasised that although the workshops focussed on the five priority areas of WQ challenges, the other areas were equally important and would be addressed as better information became available. The Catchment Management Strategies process would address WQ problems specific to the catchments.

There had been rich discussion around the root causes of WQ challenges and a framework was required in order to engage the real and potential problems. Issues of finance and institutional arrangements as well as the social drivers become critical in the development of policy. The implementation process would have to go beyond DWS to engage National Treasury and other departments. These conversations would have to be endorsed politically. The stakeholder engagement process would serve as a motivation to have these conversations.

Another matter raised was that the sources were the origin of the WQ problems. Resource related issues were not addressed, a critical aspect of the WQ issues. Issues of operations and allocation and their impact on WQ, the relationship between resource quality and sources directed controls, national infrastructure were all part of this process but a separate conversation that would be addressed through the policy process.

The information emanating from this workshop would be used to update the report, and the revised report distributed. The deep gap analysis would lead to the policy principles and a further conversation around the emerging draft policy, which would be re-consulted with stakeholders.

## **WAY FORWARD AND CLOSURE**

Dr Pegram thanked all participants for their contributions to the fruitful discussions.

Mr Viljoen also thanked the participants for their enthusiastic engagement on this very important matter.

The workshop ended at 16:00

**ANNEXURE A: ACRONYMS**

DWS	Department of Water and Sanitation
IWQMS	Integrated Water Quality Management Strategy
NDP	National Development Plan
NPS	non-point source
NWA	National Water Act
NWRS	National Water Resource Strategy
RDMWQ	Resources Directed Measures for Water Quality
RQO	Resource Quality Objectives
SDGs	Sustainable Development Goals
SWOT	Strengths, weaknesses, opportunities, threats
WQ	Water quality
WQM	Water Quality Management
WRC	Water Research Commission
WRM	Water Resource Management

ANNEXURE B: ATTENDANCE LIST					
Name	Surname	Organisation	Designation	Department	M/F
Lee	Boyd	Golder Associates Africa	Water Resources Scientist		F
Gerhard	Cilliers	DWS		Resource Quality Information Services	M
Marc	De Fontaine	Rand Water		Water Quality Monitoring	
Heather	Erasmus	Write Connection	Project Team secretariat		F
Nwabisa	Fundzo	DWS			
Andre	Görgens	Aurecon			M
Strinivasen	Govender	DWS	AD CCEO	Pongolo Umzimkulu Proto CMA	M
Neil	Griffin	Rhodes University		Institute of Water Research (IWR)	M
Geert	Grobler	DWS	Production scientist	Water Quality Planning: East	M
Paul	Herbst	DWS	Director	Water Use Efficiency	M
Danita	Hohne	DWS		NC	F
Jackie	Jay	DWS		Water Quality Planning: Central	F
Sebastian	Jooste	DWS		RQIS	M
Magda	Ligthelm		Director	Policy and Strategy Co-ordination: Strategy	F
Melissa	Lintnaar-Strauss	DWS	CEO	Western Cape Provincial Operations Office	F
Khutso	Mabela	DWS		National Register of Water Use	M
Zanele	Maphumulo	DWS	SP	WUE	F
Lebogang	Matlala	DWS			
Siboniso	Mkhaliphi		Deputy Director	Compliance Monitoring (Agricultural Processing)	M
Nokwanda	Mkhize	(For Rodrick Schwab)		Economic and Environmental Studies	F
Mahodi	Mojokeng	DWS			
Thabang	Molai	DWS			
Refilwe	Moloi	DWS			
Thandi	Mopai		Director	Enforcement	F
Lebo	Mosoa			Water Quality Planning: North	F
Ike	Motsapi	DWS			
Dean	Muruven	WWF			



ANNEXURE B: ATTENDANCE LIST					
Name	Surname	Organisation	Designation	Department	M/F
Namisha	Muthraparsad		Production Scientist / Acting Deputy Director	Compliance Monitoring (Industry)	
Beason	Mwaka	DWS	Director	Water Resource Planning Systems	
Mukhawana	Mxolisi	DWS	Scientific Manager	Water and Sanitation	
Thivafuni	Nemataheni			Resource Protection and Waste (Mines)	F
Wandile	Nomquphu	WRC			M
Thanbang	Ntjoboko	Eskom			M
Senzo	Nyahikazi	DWS			
Tovhowani	Nyamande		Scientific Manager	Information Programmes	F
Tally	Palmer	Rhodes University		Unilever Centre for Environmental Water Quality	F
Rivash	Panday	Sasol			
Guy	Pegram	Pegasys		Project Team	
Renelle	Pillay	DWS	Central Environmental Office	Pongola Umzimkulu Proto CMA	F
Fhedzisani	Ramusiya	DWS	Production Scientist	WARMS/NRWU	M
Tenda	Rasikhanya	DWS			
Traci	Reddy	Pegasys		Project Team	F
Hugo	Retief	AWARD			M
Nico	Rossouw	Pegasys		Project Team	M
Barbara	Schreiner	Pegasys		Project team	F
Marcus	Selepe	DWS	Manager: RPQW	Inkomati Usuthu CMA	M
Anesh	Surendra	Eskom			M
Jan	van Staden	DWS		Breede Overberg CMA	M
Niel	van Wyk	DWS	CE:NWRP	National Water Resource Planning	M
Jurgo	van Wyk	DWS	Scientist Manager	Water Quality Planning: Central	M
Fred	van Zyl	DWS	Director	Macro Planning	M
Pieter	Viljoen		Scientific Manager & Deputy Director	Water Quality Planning	M
Derek	Weston	Pegasys		Project Team	M

ANNEXURE B: ATTENDANCE LIST					
Name	Surname	Organisation	Designation	Department	M/F
APOLOGIES					
Carol	Ashton				
Eustathia	Bofilatos	DWS	Director	Water Management Institutional Governance	
Marie	Brisley	DWS	Chief Director	Policy and Strategy Co-ordination	
Jo	Burgess	WRC	WRC		
Shingirai	Chimuti				
Christine	Colvin	WWF			
Chris	Dickens	CGIAR			
Hlalanathi (Nathi)	Fundzo		Director	Policy and Strategy Co-ordination: Policy	
Nikki	Funke				
Bashan	Govender		Assistant Director	Gauteng Provincial Operations Office	
Nandha	Govender	Eskom			
Marius	Keet		SA Mine Water Management Unit Head	Gauteng Provincial Operations Office	
Mariette	Liefferink	Federation for a Sustainable Environment	CEO		
Bonani	Madikizela	WRC			
Sarah	McPhail	NT			
Annette	Mear	DWS		Compliance Monitoring	
Ian	Midgeley				
Veti	Mongezi	Exxaro			
Kganetsi (Willie)	Mosefowa		Acting Director	Resource Protection & Waste	
Nomathamsanqa (Tamie)	Mpotulo		Sanitation: Macro-Planning		
Ritva	Mulbauer	Anglo American			
Mike	Muller	NDP/Wits			
Patrick	Ntabeni			Urban and Rural Water Management	
Sharon	Pollard	AWARD			
Eddie	Riddel	SANP			

ANNEXURE B: ATTENDANCE LIST					
Name	Surname	Organisation	Designation	Department	M/F
Wietsche	Roets			WA&IU: Environment and Recreation	
Patsy	Scherman				
Rodrick	Schwab			Economic and Environmental Studies	
Gawie	van Dyk			Northern Cape Provincial Operations Office (Kimberly)	
Martin	van Veelen				
Francois	Van Wyk	Rand Water			
Peet	Venter	DWS		Water Quality Planning	
Barbara	Weston				



## DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS)

WP10978

### IWQMS Policy Workshop

14<sup>th</sup> June 2016 | Burgers Park Hotel, 424 Lilian Ngoyi Street, Pretoria | 09h00 – 15h00

#### AGENDA

**Chairperson:** Dr. B. Mwaka/Mr. P. Viljoen

**Purpose of Workshop:**

- To report on the project progress;
- To discuss the draft WQM Policy and its implications on strategy and implementation; and
- To highlight the way forward.

Item	Time	Topic	Responsible
	09h00 - 9h30	Arrival Tea and Coffee	
1	09h30 – 09h40	Welcome, Introductions and Purpose of the Workshop	Chair
2	09h40 – 09h55	Project Progress	DWS Project Manager
3	09h55 – 10h00	Workshop Aims and Approach <ul style="list-style-type: none"><li>▪ <i>Discussion on how the day's components fit together in the bigger picture</i></li></ul>	Facilitator: B. Schreiner
4	10h00 – 10h45	Presentation on the draft WQM Policy <ul style="list-style-type: none"><li>▪ <i>Policy Development</i></li><li>▪ <i>WQM Policy Principles</i></li><li>▪ <i>Translation of Principles to Policy</i></li></ul>	Pegasys
5	10h45 – 11h00	Discussion and clarification	All
6	11h00 – 12h30	<b>Workshop 1:</b> Translation of WQM Principles to Policy <i>Introduction to Workshop</i> <i>Table Rotation</i> <ul style="list-style-type: none"><li>▪ <i>Governance</i></li><li>▪ <i>Economics and Finance</i></li><li>▪ <i>Operations</i></li></ul>	Facilitator: G. Pegram  <i>B. Schreiner/J. van Wyk</i> <i>S. Goga/ P. Viljoen</i> <i>D. Weston/L. Mosao</i> <i>T. Reddy/ G. Grobler</i>



## water & sanitation

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA

		▪ <i>Data and Information</i>	
	12h30 – 13h15	Lunch	
7	13h15 – 14h45	<b>Workshop 2:</b> Implications on Strategy and Implementation <i>Introduction to Workshop</i> ▪ <i>Table Rotation as above</i>	Facilitator: G. Pegram
8	14h45 – 14h55	Summary and Feedback	Facilitator: B. Schreiner
9	14h55 – 15h00	Way Forward and Closure	Chair



## water & sanitation

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA

### DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT (IWQM) STRATEGY (WP10978)

#### PROCEEDINGS OF IWQMS POLICY WORKSHOP

14 June 2016, Burgerspark Hotel, 424 Lilian Ngoyi St, Pretoria, 09:00–14:45

#### Present:

Opperman, Nic	AgriSA
Retief, Hugo	Association for Water and Rural Development (AWARD)
Fourie, Melissa	Centre for Environmental Rights
Mkhonza, Amanda	Centre for Environmental Rights
Musetsho, Muvhuso	Council for Geoscience
Mametja, Edwin	Department of Agriculture, Forestry and Fisheries
Mjadu, Nomvuzo	Department of Agriculture, Forestry and Fisheries
Govender, Bashan	DWS Gauteng Provincial Operations Office
Keet, Marius	DWS Gauteng Provincial Operations Office
Van Zyl, Fred	DWS Macro Planning
Serenya, Maxwell	DWS Mzimvubu-Tsitsikamma Proto-CMA
Shibambu, Steven	DWS Orange Proto-CMA
Rasikhanya, Tenda	DWS Policy and Strategy Co-ordination: Policy
Xaba, Sibusiso	DWS Policy and Strategy Co-ordination: Policy
Ligthelm, Dr Magda	DWS Policy and Strategy Co-ordination: Strategy
Van Wyk, Jurgo	DWS Water Quality Planning: Central
Viljoen, Pieter	DWS Water Quality Planning (Chairperson)
Grobler, Geert	DWS Water Quality Planning: East
Chabedi, Tefo	Eskom
Fennemore, Chris	eThekweni Water & Sanitation
Linström, Charles	Exxaro
Liefferink, Mariette	Federation for a Sustainable Environment
Boyd, Lee	Golder Associates
Thoka, Tihologelo	National Treasury
Siqalaba, Zama	NEPAD Business Foundation
Goga, Summayya	Project team
Reddy, Traci	Project team
Schreiner, Barbara	Project team
Weston, Derek	Project team
Arnold, Robyn	Project team (Scribe)
De Fontaine, Marc	Rand Water
Liefferink, Simone	Sibanye Gold
Gosney, Gwen	TCTA

#### Apologies:

Ashe, Bryan	
Mulbauer, Ritva	Anglo American
Claassen, Marius	Council for Scientific and Industrial Research (CSIR)
Abader, Ishaam	DEA Legal Authorisations and Compliance Inspectorate
Petersen, Ashia	DWS Berg-Olifants Proto-CMA
Mabuda, Livhuwani	DWS National Water Resource Planning
Fundzo, Nathi	DWS Policy and Strategy Co-ordination: Policy
Jay, Jackie	DWS Water Quality Planning: Central
Mwaka, Dr Beason	DWS Water Resource Planning Systems
Fairall, Paul	Emifula Riverine Consultants
Mongezi, Vetu	Exxaro

Gyedu-Ababio, Thomas	Inkomati Usuthu CMA
Dickens, Chris	International Water Management Institute (IWMI)
McNamara, Alex	National Business Initiative
McPhail, Sarah	National Treasury
Muller, Mike	NDP/University of the Witwatersrand
Van Wyk, Francois	Rand Water
Pretorius, Hennie	Sibanye Gold
Riddel, Eddie	South African National Parks
Burgess, Jo	WRC
Molwantwa, Jennifer	WRC
Bhangwan, Jay	WRC/Coaltech
Colvin, Christine	WWF

## WELCOME, INTRODUCTIONS AND PURPOSE OF THE WORKSHOP

1. Mr Viljoen opened the meeting, welcomed everyone and allowed a round of introductions.
2. The purpose of the workshop was:
  - To discuss the project progress
  - To discuss the draft WQM Policy and its implications on strategy and implementation
  - To highlight the way forward.
3. In response to the country's need to take an improved integrated approach to water quality management, the Department of Water and Sanitation (DWS) had initiated a project to revise its current Water Quality Management (WQM) Policies and Strategies.
4. The project structure includes: the Project Administration Committee that deals with management and administration of the project; Project Management Committee, on which relevant DWS directorates were represented; and the Project Steering Committee, which includes external stakeholders from major sectors that impact on water quality. There had been engagement with the DWS extended top management committee. Provincial roadshows, a national symposium, a national workshop and focus group meetings were planned. The project has a website and is producing newsletters.
5. The intention of the policy and strategy was to involve other government departments and sectors with a mandate related to water quality, since this was not the responsibility of DWS alone.
6. The contract for the project was signed on 4 October 2015 and would continue until September 2017. The project comprises five phases: Inception, Assessment, Policy, Strategy and Practice. The policy and strategy were being developed through an iterative process, whereby first editions of the policy and strategy would be sent out for comment, and would be amended in response to the comments received. The project was currently in the Policy phase. A set of draft policy positions had been developed and sent out for comment. The following documents had been completed to date:

December 2015	Inception Report Quarterly Progress Report 1
January 2016	Capacity Building Strategy
February 2016	Review of WQM Policies & Strategies Review of WQM Institutional Arrangements Review of WQM Instruments Note on the WQM Challenges WQ Glossary
March 2016	Final WQM Challenges and Gaps Analysis Quarterly Progress Report 2 Stakeholder Communication Strategy Website Framework Document
April 2016	Note on the WQM Policy Principles
May 2016	Newsletter 1 (WQM Challenges)
June 2016	WQM Policy (Current Draft)

7. The project team for the WQM Policies and Strategies project would engage with the project team working on DWS restructuring to ensure that the departmental structure supports the implementation of the policy.
8. The policy principles had been presented to DWS extended top management. This was the first stakeholder meeting at which the policy was being presented.
9. DWS had previously developed policies and strategies around resource-directed management of water quality, including the 1991 *Water Quality Management Policies and Strategies* in the RSA and the 2006 *Resource Directed Management of Water Quality Policy*. From 2015, sanitation fell under the mandate of DWS, which had initiated the *National Water Policy Review, revision of the Sanitation Policy*. The policies to date had essentially been limited to the water sector under the mandate of DWS. The present initiative was to develop a sector-wide policy and strategy that would involve other government departments and relevant bodies taking responsibility for water quality in their sphere of operation. The policy would be gazetted for comment for 60 or 90 days, and the provincial and national workshops would be held concurrently with the comment period. The final policy would go to Cabinet for approval. The Inception Report and project plan were on the website.

#### **WORKSHOP AIMS AND APPROACH (PRESENTATION: BARBARA SCHREINER)**

10. A process of consultation had been followed in developing a set of policy principles, which had now been translated into a draft policy document.
11. After the presentation on the policy, the workshop would break into groups to discuss key aspects. The focus of the discussions should be on whether any aspects of the policy needed to be changed or strengthened; whether there were any critical omissions; and the implications of the policy for developing strategy and moving towards implementation.
12. A three-step process had been followed in developing the WQM policy:
  - Consideration of the background (WQM challenges and their economic impact, instruments, institutions involved, international experience and policy analysis)
  - Development of policy principles, grouped into four sets: governance, economic and financial, operational, and data and information
  - Draft WQM Policy document (edition 1), which is essentially the policy response to the identified challenges.
13. An essential message that the policy conveys is that water quality is not just an environmental issue but is also a developmental issue that impacts on economic growth in the country. It is therefore the responsibility of government as a whole, not just DWS. The economic impact of water quality challenges include:
  - Economic impacts related to livelihoods and productive sectors: Productive sectors are directly affected through, for example, reduction in crop yields, loss of tourism, and increased requirements for pre-treatment of water
  - Economic impacts related to municipal services: Costs associated with treating affected water for potable/industrial use
  - Economic impacts related to health of people: Costs to the public and private health system from diseases related to polluted water
  - Economic impacts related to ecology: Costs related to change in ecology thus impacting on ecological services, as well as costs related to rehabilitation of water resources
  - Economic impacts related to infrastructure: Costs related to corrosion of equipment and conveyance systems; costs related to clearing of waterways and drainage systems; costs related to storage capacity of impoundments. These costs accrue to both the private and public sectors
  - Economic impacts related to aesthetics: Costs related, for instance, to the economic value of properties.



14. The policy is underpinned by a fundamental recognition of the economic impacts of water quality. There has not been enough research in South Africa to quantify the costs of poor water quality. Two examples of such costs from the South African context were presented:
- Water quality and agriculture:
    - In 2012, water pollution was “a growing threat to the livelihood of emerging tobacco farmers in Groblersdal, as this affects the contracts the farmers have with British American Tobacco (BAT)”. Farmers claimed that the previous year’s crop had been rejected because of “chemical residues on tobacco leaves”.
    - In 2014, it was reported that the EU had given a final warning that it would “stop imports of crops irrigated with water from the Olifants River because of the level of health-threatening pollutants from mines seeping into the river”.
    - Bench Marks Foundation reported that farming exports were “affected by the influx of collieries with many vegetable farmers downstream from the mines in the Kendal Ogies area losing European clients due to the bad quality of water used for irrigation”.
  - Water quality and infrastructure:
    - Surveys of accumulated sediment in South Africa’s registered dams indicated that 34% of the dams have lost more than 20% of their original capacity, while 16% have lost more than 50% of their original capacity.
15. The following reasons had been identified why WQM is failing in South Africa:
- Limited technical skills: particularly in DWS and municipalities
  - Fragmented policies and implementation: lack of cooperative governance and alignment between different regulatory mandates and actions, including around compliance monitoring and enforcement
  - Inadequate measures to counter adverse agricultural and silviculture practices: practices for soil tillage; fertiliser applications; riparian buffer zones; cultivation land management
  - Challenges in municipalities: i) management of wastewater treatment works at municipal level due to lack of technically qualified staff, poor maintenance, and weak financial systems; ii) urban runoff pollution; iii) urban informal settlements leading to increasing diffuse source pollution
  - Inadequate monitoring and assessment: number and extent of monitoring points; shortage of staff; monitoring of new and emerging contaminants; translating data into information
  - Delay in the development of CMAs: delays in development of catchment management strategies
  - Limited financing for WQM initiatives: insufficient DWS budget allocation; lack of implementation of the waste discharge charge system (WDCS).
16. The vision for the policy response to these challenges was: “A government-wide approach, in alliance with the private sector and civil society that will improve resource water quality in South Africa in order to prevent pollution and ecological degradation and support ecologically sustainable economic and social development and use of the nation’s water resources.”
17. The policy position was grouped into four themes, treated in separate chapters in the policy document:
- Water quality is a developmental issue.
  - Integrated water quality regulation and management.
  - Financing integrated water quality management.
  - Knowledge and information management.
18. Each theme had a problem statement and a policy response, including the relevant policy principles.

### **Water quality is a developmental issue**

19. According to the problem statement for this theme, water quality is a Constitutional imperative, which was currently not being met. Deteriorating water quality has a massive economic impact. Water pollution arises from a range of sectors (private, public, individuals/households). DWS is primarily responsible for water quality, but many institutions have an impact or a regulatory role (DMR, DAFF, DEA, provincial and local departments, CMAs). Cooperative governance between departments and parties is not optimal, and even within DWS there is fragmentation and lack of

coherence with respect to licences, and compliance monitoring and enforcement. The private sector is responsible for significant contravention of legislation.

20. The policy response:

- There are environmental rights in the Bill of Rights; the Constitution requires all role-players to develop and implement appropriate legislation.
- WQM is not a function of DWS alone, but government-wide. The other key role players are DEA, DMR, DAFF and provincial departments of agriculture and the environment. The issues need to be tackled by government as a whole under the leadership of DWS.
- Interdepartmental harmonisation of policies, legislation and regulation is required.
- Intergovernmental structures need to be formalised in terms of the Intergovernmental Framework Relations Act.
- A joint programme of control monitoring and enforcement should be formalised and implemented.
- In order to achieve this, coordination of policies and legislation is required, including the alignment of NWA, NEMA, CARA and MPRDA; drastic intensification of cooperative governance and regulatory interfaces; intragovernmental engagement (preferably at DG level), and including National Treasury. Some departments have to balance their roles of sectoral economic development and regulation, which may lead to some contradictions.
- Capacity building is needed, not only in DWS but also for other government departments, including on-the-job training for officials and short courses.
- DWS should consider partnerships with the private sector. Resources need to be pooled between the government, private sector and civil society. DWS should forge focused, civil society and business partnerships relevant to each primary water quality challenge and promote the concept of stewardship.
- Partnerships are also needed with civil society for compliance monitoring and enforcement, and pollution prevention and rehabilitation programmes. At catchment level, citizen-based monitoring, education and awareness should be promoted, including school programmes. A cell phone app is available for citizen monitoring.

21. *The following policy principles are relevant:*

- *Policy Principle 1: Water quality is a developmental issue – In addressing the management of water quality, the economic, social and environmental impacts of deteriorating water quality must be taken into account.*
- *Policy Principle 2: Government-wide water quality management – It is the Constitutional duty of all spheres of government to protect the quality of water in our water resources.*
- *Policy Principle 3: Subsidiarity and accountability – Water quality should be managed at the lowest appropriate level and the institutions responsible for managing water quality must be held accountable.*
- *Policy Principle 5: Partnerships – In order to manage water quality effectively, partnerships should be developed between government, the private sector and civil society.*

### **Integrated water quality regulation and management**

22. According to the problem statement for this theme, there are different sources of pollution including direct discharge and diffuse sources. Pollution impacts along the length of rivers and on groundwater and is thus a catchment issue. South Africa's watercourses are shared with other countries, and water quality is hence a transboundary issue. The situation is made more complex by the range of institutions responsible for intervention and the need for cooperative governance.

23. The challenges with control monitoring and enforcement include inadequate integration within DWS; capacity challenges; lack of enforcement by DWS regarding other sectors (with dysfunctional local governments presenting a particular challenge); and sectoral roles.

24. The policy response:

- An integrated approach is needed at the catchment level:
  - This requires the provision, alignment and implementation of policies, strategies and plans for integration of catchment management and land-use management

- CMAs have a critical role to play with the appropriate delegation of functions to allow them to manage water resources at the catchment scale
  - South Africa has to comply with international water quality obligations
  - The RQOs, reserve processes and results need to be simplified for greater impact. The challenge of factoring these into water use licences must be addressed.
  - WQM needs to be factored into drought planning and preparation at the catchment level.
  - An integrated approach is needed to compliance monitoring and enforcement:
    - Roles must be clarified under the Intergovernmental Framework.
    - Integrated regulatory water monitoring committees must be created.
25. *The following policy principles are relevant:*
- *Policy Principle 4: Transboundary water quality management – Water pollution is a transboundary water management problem and must be managed within the SADC Protocol of Shared Watercourses.*
  - *Policy Principle 9: An integrated approach – An integrated resource, remediation and source directed approach which manages the water resources system as a whole at catchment or sub-catchment scale will be adopted.*
26. A differentiated risk-based approach is needed:
- WQM should be based on an integrated risk-based approach that makes optimal use of limited resources.
  - The focus should be on areas of particular sensitivity; areas where pollution is particularly hazardous; and areas where pollution is extremely high.
  - Polluters that are having the largest impact should be targeted.
  - DWS must act to protect highly sensitive areas (e.g. water source areas, wetland conservation areas), which may require an amendment to the National Water Act.
  - Green infrastructure (e.g. wetlands) is an important tool in WQM and should be protected and restored.
  - Licence application fees should reflect the risk level and the intensity of work required to consider the water use licence application.
  - Waste disposal authorisation applications should be divided into categories of complexity and level of risk, with appropriate fees allocated to each.
27. *The following policy principle is relevant:*
- *Policy Principle 12: Differentiated, risk-based approach – A differentiated risk-based approach to regulation should be adopted based on the magnitude of potential impacts.*
28. A hierarchy of regulation is required:
- Prevention and precautionary approach: it is better to prevent harm than to manage it after the fact.
  - Minimisation and reuse: where prevention is not possible and in the interests of promoting ecologically sustainable development, discharge of polluted water should be authorised with appropriate conditions. A significant tool in minimisation is reuse.
  - Reclassification of resources (which may be needed to support development): the Water Resource Classification Strategy would be used, which determines desired characteristics of water resources as represented by the management class and RQOs.
  - Rehabilitation: catchment-wide approach to determine the most effective solutions; this may include direct intervention on degraded land or resource, or action by government or polluters.
29. *The following policy principles are relevant:*
- *Policy Principle 10: Hierarchy of approaches – Water pollution management should follow the hierarchy of prevention, minimisation and re-use, including adopting the precautionary approach.*
  - *Policy Principle 11: Green/ecological infrastructure and restoration and rehabilitation – Rehabilitation and restoration of catchments should be pursued, including the use of green/ecological infrastructure.*
30. A mixture of regulatory tools will be used to achieve the objectives:

- Command and control: Primarily through authorisation of discharge, but also regulation of land-use activities; control of development activities through regulations, environmental impact assessment, prohibitions and administrative penalties (perhaps a combined approach through DWS and DEA) to avoid having to go through the overloaded and under-resourced judicial system.
  - Economic instruments: Including water pricing, charges, penalties and incentives, WDCCS
  - Voluntary regulation: Water stewardship approach supporting voluntary regulation; citizen-based regulation
  - Information and regulation: Blue and Green Drop certification; water pollution register (simply publishing behaviour on the Blue Drop system has changed behaviour).
31. *The following policy principles are relevant:*
- *Policy Principle 8: Polluter pays – The costs of remedying pollution, degradation of resource quality and consequent adverse health effects, and of preventing, minimising or controlling pollution is the responsibility of the polluter.*
  - *Policy Principle 15: Regulatory framework and administrative penalties – DWS will set up a regulatory framework for water pollution offences, including a system of tough administrative penalties.*

### Financing integrated WQM

32. According to the problem statement for this theme, the financial resources available are insufficient and do not recognise the investment required to counteract economic harm. Pollution allows the externalisation of business costs, which then have to be borne by taxpayers. The challenges include: inadequate funding raised through the regulatory mechanisms available to DWS (e.g. delayed implementation of the WDCCS); the lack of sustainable financial models for local government; inadequate implementation of provisions related to mine rehabilitation; and the unsure political climate, which has resulted in limited investment by private sector companies, including in WQM. Funding is required for regulatory activities (authorisation, control monitoring and enforcement), rehabilitation, construction and management of facilities, monitoring of water quality and research.
33. The policy response:
- Funding mechanisms need to be revised to recognise the significant economic and development impact on declining water quality.
  - Funding mechanisms should not be limited to DWS but include other public entities (including municipalities).
  - The polluter pays principle seeks accountability by ensuring that pollution costs are internalised.
  - Payments by polluters should include costs to other water users, costs of environmental degradation and indirect impacts.
  - The WDCCS is the primary mechanism.
  - Funding mechanisms need to be broadened by incentivising municipalities to address WQM; financial provisions for mine rehabilitation; incentivising and building partnerships with the private sector; and financing related to grey and green infrastructure.
  - Studies on costs associated with pollution should be supported by the WRC.
34. *The following policy principles are relevant:*
- *Policy Principle 5: Partnerships – In order to manage water quality effectively, partnerships should be developed between government, the private sector and civil society*
  - *Policy Principle 7: Broadened funding mechanisms – The mechanisms for funding water quality management should be broadened (that is, outside of DWS), given that water quality is impacted on by, and impacts on, many different sectors, and recognising the developmental impact of declining water quality.*
  - *Policy Principle 8: Polluter pays – The costs of remedying pollution, degradation of resource quality and consequent adverse health effects, and of preventing, minimising or controlling pollution is the responsibility of the polluter.*

- *Policy Principle 15: Regulatory framework and administrative penalties – DWS will set up a regulatory framework for water pollution offences, including a system of tough administrative penalties.*

### Knowledge and information management

35. According to the problem statement for this theme, there is a need for good data and information to support WQM. Monitoring is constrained by limited financial resources, lack of skilled staff, limited access to laboratories, and complexity. There are challenges in translating data into information for waste discharge authorisations and decisions on rehabilitation. Data sharing is a challenge, including in transboundary contexts. Research and innovation is a challenge. The WRC, SABS and SANS are key partners to ensure ongoing research. There are challenges in ensuring that the public has access to information, which is important in building awareness of water quality problems to change behaviour and reduce pollution.
36. The policy response:
- DWS with CMAs will develop a national monitoring network that sets out roles in the collection of data, and provision of data in standardised form.
  - Managing knowledge and information requires interdepartmental and transboundary harmonisation of policies.
  - National monitoring should provide information on the status and trends of water quality, and catchment monitoring programmes should collect additional information.
  - Data from various levels should feed into a coherent system.
  - The DWS, WRC and CMAs will lead a programme to support citizen-based monitoring to feed additional data into the system.
  - Partnerships should be forged with the private sector around the data that they hold.
  - Water quality data will be made available to the public since it impacts on human rights.
  - The WRC will develop a water research plan for the sector and promote the transfer of technologies and tools.
37. *The following policy principles are relevant:*
- *Policy Principle 13: Collection, use and protection of data – Data on water quality must be standardised, collected, managed, protected and used as a strategic asset for monitoring, management and research purposes, in an integrated, national monitoring framework.*
  - *Policy Principle 14: Publicly available information – Information and data on water quality and waste discharges must be available in the public domain.*

### Discussion

38. Ms M Liefierink commented in relation to the intention of the policy to foster cooperative governance that several of the relevant sectors and departments were not well represented at this stakeholder workshop, namely municipalities (only one representative from eThekweni); the Department of Health given the impact of water quality on health; the mining sector, particularly the gold-mining sector; and the National Nuclear Regulator.
39. With respect to cooperation with the private sector, Ms M Liefierink asked whether the consultation would only involve companies or organisations that had sufficient funding to participate, since only two NGOs were represented at this workshop. She asked which criteria had been used to determine which NGOs and CBOs should be involved in consultation. She would like to see an equitable distribution of NGOs that are not in a position to attend.
40. Ms Schreiner responded that the present workshop was one of a number of consultation workshops. The project would engage with key government departments and organisations including the Department of Cooperative Governance and Traditional Affairs (COGTA), South African Local Government Association (SALGA), Department of Agriculture, Forestry and Fisheries (DAFF) and Department of Mineral Resources (DMR).
41. The National Nuclear Regulator (NNR) had not been deliberately excluded. Ms Schreiner acknowledged that the NNR should be involved. There would also be a consultation process in each province. Mr Viljoen added that the intention was to conduct broad-based consultation.

Invitations for consultation and participation had been sent out as widely as possible, and no parties had been deliberately excluded. About 120 invitations had been sent out for the present workshop, and it was disappointing that there was so little response. The project would organise focus group meetings with departments that did not respond to invitations to attend consultation workshops. Ms Schreiner invited those present to submit the names and contact details of any stakeholders that they believed should be involved in consultation on the project, and they would be invited to attend the provincial workshops.

42. Ms M Liefferink referred to the intention of the strategy to conduct capacity building and asked whether courses would be presented for civil society, which would like to be involved.
43. Mr Viljoen responded that the policy makes a commitment to training. The training initiative would start by training of trainers in DWS.
44. Mr Keet commented that when the department had moved from the uniform effluent standard approach to the receiving water approach in the 1990s, one of the issues had been the assimilative capacity and wasteload allocation. He asked whether this would be built into the new policy again, and hoped that it would be, since it had been clear in the guidelines but had not been implemented as intended. Ms Schreiner responded that these aspects were included in the WQM Policies and Strategies.
45. Mr Keet commented on the need to focus on trade-offs, for example, spending on treating discharge from wastewater treatment works rather than on effluent from a mine. Ms Schreiner responded that the waste discharge charging strategy took a catchment perspective, and considered the critical pollution sources and how to get the biggest impact from limited resources.
46. Ms Fourie commended the policy document. She commented that many of the proposals have implications for legislation and would require amendment of the National Water Act (NWA). She enquired what process would be followed. Ms Schreiner responded that the NWA was under review, but the timeframe was not clear. The current policy process for developing the WQM policy and strategy would serve as input to the legislative amendment process.
47. Ms S Liefferink commented that better results are achieved through pooled mitigation by taking a regional approach rather than addressing individual polluters. She asked whether payments for pollution would be based on toxicity (which is generally not well understood), or on river ecological health, or on human health. Ms Schreiner responded that the policy took a catchment-based approach and would focus on the most significant pollutants.
48. Mr Serenya commented that policy rightfully assigns many responsibilities to CMAs, but there had been delays in CMAs becoming fully operational. He noted that the policy had been presented to DWS top management and asked what their comments had been and what inputs they had made towards instituting the policy.
49. Mr Viljoen responded on the need to be aware of the implementing environment and the poor capacity for water quality in the regions, given the very limited personnel numbers with a line function for WQM. The policy sought ways to expand the capacity for WQM by involving other government departments and citizen stewardship. When the policy goes to Cabinet for approval, the capacity, skills and financial implications for implementation must be known.
50. Ms Schreiner added that top management had provided useful comments that had informed the policy document. Several key members of top management had not been present at the meeting, and the project team would therefore meet separately with the relevant DDGs and their senior staff.
51. Mr Serenya emphasised that it would not be possible to strengthen regulation without the capacity for implementation. CMAs would have to be capacitated to perform their functions as assigned by the policy.

52. Mr Fennemore suggested the need for more emphasis on diffuse sources (e.g. ammonia and phosphorus from sugar cane farming) through incentives or taxes on fertilisers in order to get load levels below the threshold. He accepted the approach towards simplification, but stressed the need for detail where necessary.
53. Ms Schreiner responded that it was difficult to deal with diffuse sources, and the approach was therefore to look at land use (e.g. through engagement with DAFF, since fundamental change was needed in the way land is used).
54. Mr Retief commented that the approach should be based on total load. He asked whether the approach would be to concentrate industries in some areas, thereby sacrificing certain catchments. The strategy would have to consider seasonal load distribution and maximum daily load, which would require water quality and quantity modelling. He asked if water resource management models would be reviewed for the South African context.
55. Mr Viljoen responded that waste load allocation had been in place since 1991 when the approach had moved from end-of-pipe effluent standards to utilising assimilative capacity. He commented that modelling had been the subject of debate in DWS and had been considered by a technical advisory group. DWS did not prescribe models as this would stifle innovation. DWS promoted the development of accurate allocation modelling in order to meet the minimum effluent standards.
56. Ms Schreiner added that part of the approach was adaptive management.
57. Mr de Fontaine commented that the public are looking for ways of interacting with government, but the policy would need to be simplified for presentation to the public in such a way that they understand how it would impact on their lives. If properly communicated, the policy could be met with a groundswell of enthusiasm. The policy should be communicated to catchment management forums, and DWS would have to actively engage with forum members and establish personal relationships with them through email conversation.
58. Mr Chabedi observed that licensing seemed to be the only formal process in which DWS was making decisions about WQM, and asked whether the project team had considered how to use licensing as a tool. He did not believe that licensing was being appropriately or effectively used, and other WQM mechanisms were not integrated with licensing. Industry would like to take initiative but was not receiving sufficient direction from DWS.
59. Ms Schreiner responded that in developing the policy, a suite of tools was being considered. Water use authorisations would continue, but a number of other tools need to be used together with licensing, for example, economic instruments and partnerships. The processes of classification need to be simplified. General authorisation is possibly an under-utilised tool, and could be part of a process of focusing on big polluters first and then moving to smaller users later.
60. Mr Viljoen noted that WQM policies had been communicated to catchment management forums, for example, the policy on re-use. The WQM Policies and Strategies project had been presented at catchment forums, and the comments received included that DWS should consult more. Catchment forums are asking for compliance monitoring and enforcement.
61. Ms Boyd commented that integrated water resource management would require huge change. Study data from a catchment should be shared willingly with the relevant CMA, even if they did not pay for the data.
62. Mr van Zyl commented that the critical water quality situation in South Africa required radical intervention. There had been only 40 Green Drop awards out of over 1000 municipalities. Most municipalities were in a critical state. There is a need to be honest about why things are not working; the problems are not related only to money, but also to lack of discipline, poor governance and failure of accountability.

63. Ms Schreiner concurred that the issues are not just related to money but also to capacity and relationships (e.g. between municipalities and DWS). Given that WQM is in crisis in South Africa, the policy considers the critical things that we must and can do now that will have a big impact and turn things around.

#### **WORKSHOP 1: TRANSLATION OF WQM PRINCIPLES TO STRATEGY**

64. Participants rotated between tables in order to participate in roundtable discussions on each of the following four themes, and the comments were recorded by a project team member at each table:

- Governance
- Economics and finance
- Operations
- Data and information.

#### **WORKSHOP 2: IMPLICATIONS FOR STRATEGY AND IMPLEMENTATION**

65. Tables discussed the implications of the WQM principles for strategy and implementation and reported back to the plenary.

##### **Group 1 (Feedback: Mr Fennemore, Mr Raskihanya, Ms Gosney)**

66. The following feedback was provided:
- a. Two interventions are required, namely preventative greenfields and reactive brownfields approach. The brownfields approach would include the operation and maintenance of facilities; benchmarking what is good and what is bad (e.g. in the case of coal mines, the tons of salt per megaton of coal produced).
  - b. There is a need to prioritise and characterise the needs of each catchment, which would involve resource economics and understanding environmental services, together with long-term modelling of different scenarios for the catchment. The approach would thus be both active and reactive. With respect to environmental goods and services, environmental stewardship is required, along with resource economics to assess the benefits, which feeds into risk management.
  - c. It is in the interests of companies such as Eskom to look at the catchments that supply their water, and at environmental stewardship in those catchments, not only as it relates directly to them, but also through their suppliers such as coal mines.
  - d. There is a need for enforcement in order to start bringing those that are non-compliant to book.
  - e. There is a lot of information available, including national data on WMS, as well as regional and local data on users that are not complying. It needs to be examined why they are not complying. The Green Drop has helped to some extent with respect to sanitation.
  - f. The approach will have to influence spatial planning (National Framework Strategy, Provincial Spatial Development Plans and the local integrated Development Plans).
  - g. 'No-go areas' should be established where no development will be allowed; in particular, the upper reaches of catchments should be 'no-go areas'.
  - h. The best available technologies (worldwide and locally) must be used, especially for new developments.
  - i. Water provisioning requires the application of a Benefit Assessment Tool (BAT).
  - j. Waste presents business opportunities as a resource. Education and awareness are needed in order to make shifts in the concept of waste as a resource.
  - k. Capacity building is important for the drafting of requirements. In terms of compliance and enforcement, the requirements must be doable; and when users do not comply, they must be taken to book.
  - l. Taxes should be imposed on agriculture for non-point source discharge related to fertilisers and chemicals.

##### **Group 2 (Feedback: Ms S Liefferink, Ms Boyd, Ms Fourie, Mr Sigalaba)**

67. The following feedback was provided:



- a. CMAs should be used to implement the strategy, together with catchment management forums, and increase participation of civil society.
- b. Civil society can take on considerable capacity building in communities. Civil society needs recognition.
- c. Knowledge is important – not just scientific knowledge; local knowledge also needs to be incorporated.
- d. Understanding what local people want will help prioritise WQM issues in a catchment.
- e. Enforcement needs to be strengthened and increased, especially in local municipalities with respect to sewage treatment. The Human Rights Commission and the Public Protector could be used to ensure enforcement.
- f. DEA has produced models and strategies that could be adapted and used.
- g. The timeline is important in strategy implementation.
- h. It will be valuable to manage from a catchment perspective rather than a user basis, particularly with respect to information.
- i. Licence conditions should be improved, and it is important to implement what comes out of the reports that licensed users are required to submit.
- j. A radically different approach is needed for wastewater treatment works, as the status quo is not working. There is legal backing for enforcement that needs to be implemented. However, enforcement is not the only approach; a comprehensive approach should be followed.
- k. It should be recognised that there may be limitations in the ability to participate in catchment management forums (e.g. travel costs) due to limited resources in that some participants have low or no income. Catchment management forums are non-statutory bodies that depend on volunteers, and those who participate are generally those who can afford to. Even if NGOs or CBOs were invited to attend this workshop, many would not have the means to attend.
- l. The best available technology needs skills to operate that are not always available; perhaps the most appropriate technology should rather be used at wastewater treatment works.

### **Group 3 (Feedback: Mr van Wyk,**

68. The following feedback was provided:

- a. In taking policy to practice, responsibilities must be clarified in terms of who, what, where and how.
- b. There may be sector-specific differences in implementation.
- c. There will also be similarities that will have to be considered in the context of a particular catchment.
- d. Information and data are very important for implementation.
- e. A self-improving cycle must be built into the strategy for adaptive management.
- f. There are different levels of strategies. It was discussed where this policy and strategy stand in relation to the NWRS and other water-related policies. A vertical line of integration is needed between the WQM Policies and Strategies, national policies, local government strategies, catchment strategies and water-use strategies.
- g. Horizontal integration is also required in order to influence the strategies of other government departments and role players.
- h. The international implications deserve special treatment from the perspective of political integration.
- i. The words 'reasonable' and 'achievable' were raised in relation to the aim of the strategy.
- j. The strategy needs to be implementable, with practical and phased implementation.
- k. The strategy should be line with the targets for achieving the Sustainable Development Goals.
- l. The strategy will have financial and skills implications. There will have to be a budget for implementation, particularly by other government departments.
- m. With respect to the regulatory implications, there is a need for a broader approach, and legislative revision will probably be required.
- n. Priority actions must be communicated to other government departments in such a way as to get their buy in.
- o. The alignment with other government role players must be taken to the individual level of the officials responsible by translating the broad aims of the policy into implementation tasks.
- p. The policy and strategy will provide a sound framework, but it will be important to ensure that other government departments put the framework into action.
- q. There will have to be agreements and structures for collaboration between departments.

- r. The cost of implementation will be very important. In terms of the developmental implications, the cost implications will be important in lobbying. The cost/benefit implications could be used to convince other role players to work towards implementation.
- s. DWS has officials who are experts in water quality, but capacity will have to be built in other departments.
- t. The existing policy and strategy of other line function departments may need to be revised, and the strategy will have to find ways of dealing with that.
- u. The strategy should ensure that water quality is addressed as part of water security.

## Discussion

- 69. Ms Boyd emphasised that water regulators need to take up and integrate the outcome of research into their operations. She commented that the reaction of DWS to the recommendations of WRC research projects sometimes seemed almost antagonistic, even though DWS and the WRC work closely together.
- 70. Ms S Liefferink added that the outcome of other water research also needs to be integrated into DWS operations.
- 71. Ms M Liefferink posed the question of how the WQM policy and strategy would be integrated with the NWRS, since it seems in some respects to be a duplication.
- 72. Dr Ligthelm responded that the development of the WQM strategy was a strategic action for the implementation of the NWRS, and must be aligned with the NWRS. The intention of the WQM Policies and Strategies initiative was also to develop innovative approaches that could make a real difference, which could feed into the revision of the NWA and National Services Act. Ms Schreiner added that the WQM Policies and Strategies were regarded as the water quality component of the NWRS and would be considered an update to the NWRS and factored into the revision of the NWRS, which was due in June 2018.
- 73. Ms Gosney stressed the importance of understanding the links between politics and the technicalities of delivery. Sound policy could not be implemented unless funding was made available from the political realm. The policy and strategy would have to be marketed to political decision makers, but technical people are generally not good marketers. Dr Schreiner concurred that politicians and technical people 'speak a different language'. This was addressed to some extent by framing the policy around economic development.
- 74. Mr Chabedi commented that people tend to react only when there is a crisis. Trade-offs are made on a daily basis, but the effects of WQM take time to show results. It is difficult to motivate funding for an objective that could take several decades to achieve. Ways need to be found to bring about a change of mindset.
- 75. Ms Gosney proposed that the strategy needs measurable indicators that are broadly published. The strategy should be explicit about what it intends to achieve; how performance will be measured against that; and the consequences of non-compliance. Compliance enforcement should include bad publicity ('name and shame') of non-compliant users, and positive publicity for those that perform well. Ms Schreiner responded that this could be achieved through a pollution register.
- 76. Ms S Liefferink noted that the scientific background needs to be provided to motivate whatever water quality limits are set.
- 77. Ms S Liefferink suggested that spatial planning should delineate areas that should not be touched.
- 78. Ms Fourie stressed the need to distinguish what we are incentivising, and not to incentivise what users are supposed to do anyway; for example, municipalities should not receive incentives for operations and maintenance that they are expected to do, otherwise it would send the wrong message.

79. Ms M Liefferink emphasised the importance of the deployment and allocation of physical and human resources to achieve the desired goals.
80. Ms Gosney emphasised the importance of different kinds of data and information in order to foster learning (e.g. causes behind an incident; cost of contamination; hierarchy of incidents). With respect to performance reporting of mines, municipalities and other users, it would be important to consider what they are required to report about resource quality and use.
81. Mr Fennemore commented on the importance of the triple bottom line, yet the auditor general only looks only at finance. The strategy should require far broader reporting.
82. Mr Chabedi commented that the linkages between access to water and water quality should be emphasised in the strategy. Ms Schreiner observed that it would appeal to the language of politicians to link water quality to access to water, and that the policy was written in this way.
83. Ms S Liefferink commented that not all communities have access to potable water, and that the resource have to be managed for those for whom rivers are still their only access to water. Ms Schreiner commented that rivers could not be managed to potable water quality.
84. Ms Gosney commented that infrastructure performance criteria must prevent building silt traps. It was inefficient to raise dam walls, for example. Mr Fennemore stressed the importance of optimising resources.
85. Ms Schreiner agreed that the policy and strategy should emphasise the relationship between water quality and quantity, part of which was to optimise the management of infrastructure.
86. Mr Viljoen commented that infrastructure should be considered in a broader context, for example, water quality is linked to sedimentation erosion in the ecology. Lack of maintenance and operation of infrastructure needs to be addressed, not only in relation to dams but also wastewater treatment works.
87. Ms Thoka emphasised the importance of cohesion with different government departments to address the financial implications of the strategy and get buy in. Creative ways would have to be found to use existing baselines to fund the strategy.
88. Ms S Liefferink stressed the value of the water resources themselves (e.g. the water quality function of wetlands). Ms Schreiner responded that protection and rehabilitation form part of the strategy, and could include the creation of artificial wetlands.

## **SUMMARY AND FEEDBACK**

89. Ms Schreiner was gratified at the overall positive reception of the policy. She summarised the main themes in the recommendations as the need for a catchment-based approach at landscape scale, as well as the need to deal differently with the various sectors (e.g. mines, municipalities and agriculture).

## **WAY FORWARD AND CLOSURE**

90. Mr Viljoen thanked everyone for their attendance and participation, and commented on the good interaction with the diverse group. He commented that many of the issues raised were included in the policy document. The workshop had provided support for the sectoral approach but identified challenges, especially for departments without water specialists. The strategy would have to be written in such a way as to be readily understood in the context of other government departments. Getting buy in from other sectors and departments posed a massive challenge.
91. The Project Management Committee would be meeting on 21 June, and the Project Steering Committee on 21 July. The first edition of the policy would be finalised by the end of July 2016 and would then go through the internal approval process in DWS. Participants were invited to submit further comments on the policy document by the end of June 2016, and to suggest stakeholders for inclusion in the stakeholder database.

92. Ms M Liefferink asked whether the policy document could be distributed to representatives of conservancies and communities, and Mr Viljoen responded that the policy had been created in the public environment and would be publicly available on the DWS website.

**APPENDIX 1: LIST OF ACRONYMS**

CARA	Conservation of Agricultural Resources Act
CBO	Community-based organisation
CMA	Catchment management agency
DAFF	Department of Agriculture, Forestry and Fisheries
DDG	Deputy Director General
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
DWS	Department of Water and Sanitation
IWQMS	Integrated water resource management
MPRDA	Mineral and Petroleum Resources Development Act
NDP	National Development Plan
NEMA	National Environmental Management Act
NEPAD	New Partnership for Africa's Development
NGO	Non-governmental organisation
NNR	National Nuclear Regulator
NWA	National Water Act
SABS	South African Bureau of Standards
SANS	South African National Standards
TCTA	Trans Caledon Tunnel Authority
WDCS	Waste discharge charge system
WMS	Water Management System
WQM	Water Quality Management
WRC	Water Research Commission
WWF	World Wide Fund for Nature

**APPENDIX 2: COMMENTS FOR THE COMMENTS REGISTER FROM IWQMS STAKEHOLDER WORKSHOP 02 (14 JUNE 2016)**

	<b>Comment</b>	<b>Suggested by</b>
1	IWQMS Policy Workshop 02, para 57: The policy would need to be simplified for presentation to the public in such a way that they understand how it would impact on their lives. If properly communicated, the policy could be met with a groundswell of enthusiasm.	Mr de Fontaine, Rand Water
2	IWQMS Policy Workshop 02, para 61: Study data from a catchment should be shared willingly with the relevant CMA, even if they did not pay for the data.	Ms Boyd, Golder
3	IWQMS Policy Workshop 02, para 62: There is a need to be honest about why things are not working; the problems are not related only to money, but also to lack of discipline, poor governance and failure of accountability.	Mr van Zyl, DWS Macro Planning
4	IWQMS Policy Workshop 02, para 66a: Two interventions are required, namely preventative greenfields and reactive brownfields approach. The brownfields approach would include the operation and maintenance of facilities; benchmarking what is good and what is bad (e.g. in the case of coal mines, the tons of salt per megaton of coal produced).	Group 1
5	IWQMS Policy Workshop 02, para 66b: There is a need to prioritise and characterise the needs of each catchment, which would involve resource economics and understanding environmental services, together with long-term modelling of different scenarios for the catchment, cost/benefit analysis and risk management.	Group 1
6	IWQMS Policy Workshop 02, para 66f: The approach will have to influence spatial planning (National Framework Strategy, Provincial Spatial Development Plans and the local integrated Development Plans).	Group 1
7	IWQMS Policy Workshop 02, para 66g&77: 'No-go areas' should be established where no development will be allowed; in particular, the upper reaches of catchments should be 'no-go areas'. Spatial planning should delineate areas that should not be touched.	Group 1 Ms S Liefferink, Sibanye Gold
8	IWQMS Policy Workshop 02, para 66j: Waste presents business opportunities as a resource. Education and awareness are needed in order to make shifts in the concept of waste as a resource.	Group 1
9	IWQMS Policy Workshop 02, para 66l: Taxes on should be imposed on agriculture for non-point source discharge related to fertilisers and chemicals.	Group 1
10	IWQMS Policy Workshop 02, para 67a, b & k: The role of civil society in implantation and capacity building in communities needs to be recognised; the difficulties of financing voluntary participation of NGOs and CBOs need to be acknowledged.	Group 2
11	IWQMS Policy Workshop 02, para 67c: Knowledge is important – not just scientific knowledge; local knowledge also needs to be incorporated.	Group 2
12	IWQMS Policy Workshop 02, para 67e: The Human Rights Commission and the Public Protector could be used to ensure enforcement.	Group 2
13	IWQMS Policy Workshop 02, para 67f: DEA has produced models and strategies that could be adapted and used.	Group 2
14	IWQMS Policy Workshop 02, para 67l: The best available technology needs skills to operate that are not always available; perhaps the most appropriate technology should rather be used at wastewater treatment works.	Group 2
15	IWQMS Policy Workshop 02, para 68a&b: In taking policy to practice, responsibilities must be clarified in terms of who, what, where and how. There may be sector-specific differences in implementation.	Group 3

16	IWQMS Policy Workshop 02, para 68e: A self-improving cycle must be built into the strategy for adaptive management.	Group 3
17	IWQMS Policy Workshop 02, para 68f: A vertical line of integration is needed between the WQM Policies and Strategies, national policies, local government strategies, catchment strategies and water-use strategies.	Group 3
18	IWQMS Policy Workshop 02, para 68h: The international implications deserve special treatment from the perspective of political integration.	Group 3
19	IWQMS Policy Workshop 02, para 68j: The strategy needs to be implementable, with practical and phased implementation.	Group 3
20	IWQMS Policy Workshop 02, para 68l: The strategy will have financial and skills implications. There will have to be a budget for implementation, particularly by other government departments.	Group 3
21	IWQMS Policy Workshop 02, para 68n: Priority actions must be communicated to other government departments in such a way as to get their buy in.	Group 3
22	IWQMS Policy Workshop 02, para 68o: The alignment with other government role players must be taken to the individual level of the officials responsible by translating the broad aims of the policy into implementation tasks.	Group 3
23	IWQMS Policy Workshop 02, para 68q: There will have to be agreements and structures for collaboration between departments.	Group 3
24	IWQMS Policy Workshop 02, para 68u: The strategy should ensure that water quality is addressed as part of water security.	Group 3
25	IWQMS Policy Workshop 02, para 69: Water regulators need to take up and integrate the outcome of research into their operations	Ms Boyd, Golder
26	IWQMS Policy Workshop 02, para 73: The policy would have to be well marketed at the political level.	Ms Gosney, TCTA
27	IWQMS Policy Workshop 02, para 74: It is difficult to motivate funding for an objective that could take several decades to achieve. Ways need to be found to bring about a change of mindset.	Mr Chabedi, Eskom
28	IWQMS Policy Workshop 02, para 75: The strategy needs measurable indicators that are broadly published. The strategy should be explicit about what it intends to achieve; how performance will be measured against that; and the consequences of non-compliance.	Ms Gosney, TCTA
29	IWQMS Policy Workshop 02, para 75: Compliance enforcement should include bad publicity ('name and shame') of non-compliant users, and positive publicity for those that perform well.	Ms Gosney, TCTA
30	IWQMS Policy Workshop 02, para 76: The scientific background needs to be provided to motivate whatever water quality limits are set.	Ms S Liefferink, Sibanye Gold
31	IWQMS Policy Workshop 02, para 78: The strategy implementation should not incentivise what users are supposed to do anyway; for example, municipalities should not receive incentives for operations and maintenance that they are expected to do, otherwise it would send the wrong message.	Ms Fourie, Centre for Environmental Rights
32	IWQMS Policy Workshop 02, para : Different kinds of data and information are important in order to foster learning (e.g. causes behind an incident; cost of contamination; hierarchy of incidents).	Ms Gosney, TCTA
33	IWQMS Policy Workshop 02, para 82: The linkages between access to water and water quality should be brought out in the strategy	Mr Chabedi, Eskom



## DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS) - WP10978

### IWQM Strategy Workshop

26<sup>th</sup> August 2016 | Protea Hotel Centurion | 09h00 – 15h00

#### DRAFT AGENDA

**Chairperson:** B. Mwaka/P. Viljoen

**Purpose of Meeting:**

- Provide an update on project progress;
- Provide an update on the WQM Policy;
- Describe the process that will be followed to develop the IWQM Strategy;
- Solicit inputs into the intent, objectives and approach for the IWQM Strategy;
- Discuss the prioritisation of the key strategic actions for the IWQM Strategy; and
- Map out the way forward.

Item	Time	Topic	Responsible
	09h00 – 09h30	Arrival Tea and Coffee	
1	09h30 – 09h45	Welcome, Introductions and Purpose of the Meeting	Chair
2	09h45 – 10h05	Project Progress to Date	P Viljoen
3	10h05 – 10h45	Review of the WQM Policy	P Viljoen
	10h45 – 11h00	Tea	
4	11h00 - 11h10	Overview: Water Quality and the NWRS2	M Ligthelm
5	11h10 – 11h25	Process of Development for the IWQM Strategy	Pegasys
6	11h25 – 12h00	Developing the Strategic Intent <ul style="list-style-type: none"><li>▪ <i>Group Discussions</i></li><li>▪ <i>Feedback from Groups</i></li></ul>	Pegasys All *Project Team
7	12h00 - 12h45	Developing the Strategic Approach <ul style="list-style-type: none"><li>▪ <i>Group Discussions</i></li><li>▪ <i>Feedback from Groups</i></li></ul>	Pegasys All *Project Team
	12h45 – 13h30	Lunch	
8	13h30 – 14h45	Prioritisation of Strategic Actions <ul style="list-style-type: none"><li>▪ <i>Group Discussions</i></li><li>▪ <i>Feedback from Groups</i></li></ul>	Pegasys All *Project Team
9	14h45 – 15h00	Closure and way forward	





## water & sanitation

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA

### DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS) - WP10978

#### PROCEEDINGS OF IWQMS STRATEGY WORKSHOP Protea Hotel, Hendrik Verwoerd Drive, Centurion 26 August 2016 09:00–15:00

##### Present:

Opperman, Nic	AgriSA
Mulbauer, Ritva	Anglo American
Van Staden, Jan	Breede-Gouritz CMA
Makwela, Matome	Chamber of Mines
Mjadu, Nomvuzo	Department of Agriculture, Forestry and Fisheries
Kgasago, Palo	DAFF
Terarai, Farai	Working for Wetlands
Buthlezi, Siyabonga	DWS Pongola-Umzimkulu Proto-CMA (PUCMA)
Bofilatos, Eunice	DWS
Brisley, Marie	DWS Policy and Strategy
Segoale, Doris	DWS
Ligthelm, Magda	DWS Policy and Strategy Co-ordination: Strategy
Van Wyk, Jurg	DWS Water Quality Planning: Central
Jay, Jackie	DWS Water Quality Planning: Central
Viljoen, Pieter	DWS Water Quality Planning (Chairperson)
Grobler, Geert	DWS Water Quality Planning: East
Mosoa, Lebo	DWS Water Quality Planning: North
Nemutudi, Eunice	DWS Compliance Monitoring
Enele, Mmakgang	DWS
Pillay, Renelle	DWS
Fundzo, Nathi	DWS Policy and Strategy Co-ordination: Policy
Veti, Mongezi	Exxaro
Mporetji, Simon	Goldfields
Liefferink, Mariette	Federation for a Sustainable Environment
Dickens, Chris	International Water Management Institute (IWMI)
Sefepe, Mamaropeng	INCMA
Davel, Robert	Mpumalanga Agriculture
Ngobeni, Misaveni	National Treasury/COGTA
Reddy, Traci	Project team
Weston, Derek	Project team
Collins, Marilyn	Project team (Scribe)
Molwantwa, Jennifer	WRC

##### Apologies:

Pollard, Sharon	Association for Water and Rural Development (AWARD)
Retief, Hugo	Association for Water and Rural Development (AWARD)
Petersen, Ashia	Berg-Olifants Proto – CMA
Buthlezi, Phakamani	Breede Overberg CMA
Malebana, Kwena	CD: Economic Regulation
Lesufi, Nikisi	Chamber of Mines
Claasen, Dr Marius	CSIR

Abader, Ishaam	DEA: Legal Authorisations and Compliance Inspectorate
Mofokeng, Mahadi	DWS
Rasikhanya, Tenda	DWS: Policy and Strategy Coordination : Policy
Fairall, Paul	Emifula Riverine Consultants
Govender, Nandha	Eskom
Surendra, Anesh	Eskom
Emela, Mochubele	Exxaro
Golder, Lee	Golder Associates
Palmer, Tally	Groundwater Management Institute of Southern Africa
Riddel, Eddie	Kruger National Park
Maumela, Doris	Limpopo Proto-CMA
McPhail, Sarah	National Treasury
McNamara, Alex	NBI
Schreiner, Barbara	Pegasys
Reddy, Jay	Pongola-Umzimkulu Proto – CMA
Pegram, Guy	Project team
Dini, John	SANBI
Ginster, Martin	SASOL/CAIA
Bhangwan, Jay	WR/Coaltech
Burgess, Jo	WRC
Colvin, Christine	WWF

## WELCOME, INTRODUCTIONS AND PURPOSE OF THE WORKSHOP

1. Mr Viljoen opened the meeting, welcomed everyone and allowed a round of introductions.
2. The purpose of the workshop was:
  - To provide an update on project progress
  - To provide an update on the WQM Policy
  - To describe the process that will be followed to develop the Integrated Water Quality Management Strategy (IWQMS)
  - To solicit inputs into the intent, objectives and approach for the IWQM Strategy
  - To discuss the prioritisation of the key strategic actions for the IWQM Strategy
  - To map out the way forward.
3. The workshop was attended by targeted stakeholders representing a wide range of sectors that would have a role in implementing, or which would be affected by, a revised Water Quality Management (WQM) Policy and Strategy for South Africa. Edition 1 of the WQM Policy had been developed and this would be followed by the development of the strategic approach.
4. The chairperson advised the meeting that the WQM Policy would not be dealt with at this forum but that the concerns of the participants were invited in order to take the project forward.

## PROJECT PROGRESS TO DATE (PRESENTATION: MS J JAY, MS M BRISLEY)

### Project Background

5. Water pollution impacts on economic growth, human health, ecosystems, job creation and business costs, including:
  - Costs associated with the reduction in crop yields
  - Costs associated with treating affected water
  - Costs to the public and private health systems from diseases related to polluted water
  - Costs related to loss of ecosystem functions and subsequent loss of tourism
  - Costs related to clearing of waterways and draining systems.

6. The above were largely attributed to the challenges experienced in managing the various sources of pollution such as:
  - Air pollution
  - Agricultural drift and run-off
  - Industrial wastewater discharges
  - Run-off from unserviced areas
  - Urban run-off
  - Challenges with the management of mine water and sewage water.
7. South Africa is a water-scarce country. Water in South Africa is in great demand; as the human population increases, the demand for safe drinkable water grows.
8. Factors contributing to the WQM challenges are:
  - Sources of water pollution: Varying sources of pollution (both point source and diffuse) and water quality challenges along the hydrological regime
  - Catchments are complex socio-economic systems and some are a shared water course. Integrated and adaptive approaches within and across catchments should be implemented
  - WQM is hampered by poor coordination and conflicting approaches between government departments
  - Financial resources are insufficient and do not recognise the investment required to counteract economic harm
  - Insufficient data and information management
  - Capacity and skills constraints in the field of WQM
  - Whilst policies and strategies related to WQM do exist, they would need to be expanded and revised to adequately address water quality. The policies and strategies would need to be aligned with current overarching policy and legislative frameworks; there is furthermore a need to be aware of socio-economic trends in South Africa, new ways of thinking, current challenges and emerging global issues related to WQM.
9. In response to the country's need to take an improved integrated approach to WQM, the Department of Water and Sanitation (DWS) initiated a project to revise its current WQM policies and to develop a national integrated WQMS.
  - a. The project commenced in October 2015 and would continue until September 2017. It consists of five phases: Inception, Assessment, Policy, Strategy and Practice. Edition 1 of the WQM Policy was compiled from existing policies as they relate to WQM, with stakeholder inputs and a literature survey to identify gaps. It was developed based on information from the assessment phase, inputs from project committees and inputs from stakeholder consultations. Edition 2 would be a revision of Edition 1 and would incorporate inputs from wider stakeholder consultations.

## Project Progress

11. A number of reports had been issued to date, namely:
  - Inception report
  - Reports relating to the literature review:
    - WQM Policies and Strategies in South Africa (included lessons learned from international experiences)
    - WQM institutional arrangements
    - WQM instruments
    - WQ and WQM challenges in South Africa
    - WQ glossary

The two latter reports were initial reports; as the project progressed, new information that came to light would be incorporated into the reports. The final versions of these reports would be produced towards the end of the project in September 2017.

  - Stakeholder Communication Strategy; the first and second newsletters had been published on the DWS website.
  - Note on the WQM Policy principles

- WQM Policy (Edition 1) had recently been produced and was provided for discussion at the current workshop
- Note on the Strategic Framework.

Information on the project and copies of the above documents were available on the DWS website ([www.dws.gov.za/projects/iwqms](http://www.dws.gov.za/projects/iwqms)).

### Development of the WQM Policy

12. Initially, internal consultations were held with appropriate entities and governmental departments, including the Department of Mineral Resources (DMR), Department of Environmental Affairs (DEA), Department of Agriculture, Forestry and Fisheries (DAFF), Department of Rural Development and Land Reform (DRDLR).
13. Stakeholder engagement opportunities would be organised, after which the Policy would be published for public comment.
14. Edition 2 of the Policy and the Strategy would need to be published by the end of the financial year, followed by a four-month implementation phase, after which the Policy would be submitted to Cabinet for approval and formalisation.
15. The core concept of the project was that WQ affects the economy and well-being of society and remains a key issue for South Africa to move forward in terms of economic development and social development. Although DWS is the sector leader in WQM, many other parties would have a role to play and a joint approach between government departments, the private sector and civil society would form the basis for tackling the water quality challenges facing the country. The initiatives would also include the Department of Health (DoH). At the implementation stage, the Policy would not be issued by DWS alone, but would include the input from other relevant sectors.
16. The goal of the Policy is to set out a concerted inter-governmental approach to managing source and resource water quality, in partnership with civil society and the private sector, as part of the process of ensuring that there is enough water of appropriate quality to meet the demands of a healthy population and a prosperous economy.
17. The WQM comprises 15 Policy principles:
  - Principle 1: Government-wide water quality management
  - Principle 2: Subsidiarity and accountability
  - Principle 3: Transboundary water quality management
  - Principle 4: Partnerships
  - Principle 5: Administrative fairness and implementability
  - Principle 6: Administrative penalties
  - Principle 7: Water quality is a developmental issue
  - Principle 8: Broadened funding mechanisms
  - Principle 9: Polluter pays
  - Principle 10: An integrated approach
  - Principle 11: Hierarchy of decision-making
  - Principle 12: Green/ecological Infrastructure restoration and rehabilitation
  - Principle 13: Differentiated, risk-based approach
  - Principle 14: Collection and protection of data
  - Principle 15: Publicly available information

In formulating these principles, lessons learned were examined, implementation challenges were scrutinised and policy positions were strengthened. The Strategy would be aligned to regulations for the enforcement of the 15 principles. This would ensure that DWS would be able to manage, regulate and enforce WQ in the country going forward.
18. The Policy had been divided into four chapters:
  - Chapter A: Taking an inclusive approach to WQM

Chapter B: Applying integrated, adaptive WQM  
 Chapter C: Financing integrated WQM  
 Chapter D: Building the knowledge and capacity base.

19. Each chapter describes the problem or challenge that would need to be resolved through policy, the response to mitigate the challenge; and the principles that would need to be adopted to respond to the challenge.
20. Chapter A addresses an inclusive approach that would need to be taken for WQM in South Africa. The following issues were required to achieve the framework for IWQM:
  - The need to understand the impact of water quality on the socio-economic and ecological development in the country
  - The framework for protection began with the Constitution. All government role-players would be required to collaborate and develop and implement appropriate measures and operate in concert
  - Inter-departmental harmonization of policies, legislation, regulation and other functions related to WQM would need to be addressed and formalised inter-departmental structures would be required where DWS would build on existing structures, rather than creating new structures
  - DWS was responsible for leadership and co-ordination of other departments and spheres of government.
  - The participation of business and civil society and other role players would be encouraged where appropriate.
21. Chapter B spelt out the nature of an integrated approach to adaptive WQM and various decision-making approaches that would need to be implemented, which would form the framework for the IWQM. The following decision-making approaches were used:
  - WQ would be managed in an integrated manner at the catchment level (integrated water, air, land use planning).
  - A hierarchy of decision-making would need to be implemented for the prevention and minimisation of effluent standards.
  - An integrated resource-directed rehabilitation approach would be adopted.
  - Differentiated, risk-based approaches would be used to protect strategic water source areas.
  - Precautionary and adaptive management principles would be applied.
22. Chapter B regulatory instruments included:
  - Command and control land-use activities – the control of development activities through regulations, environmental impact assessment reports (EIAs), prohibitions and administrative penalties
  - Economic instruments – water pricing, charges, penalties and incentives and water demand conservation management (WDCS)
  - Voluntary regulation – water stewardship approach and citizen-based regulations. The latter had been extensively discussed with private sector and other organisations to ensure that there would be some measure of self-regulation and responsibility
  - Links between information and regulation – Blue/Green drop certification, water pollution register, improvement in the efficiency and effectiveness of information systems.
23. Chapter C addressed the tools required for the financing of the WQM:
  - Funding mechanisms would need to recognise the economic and development impact of poor water quality.
  - Funding should not be limited to DWS; all departments had a role to play and should be looking at ways to increase the financing of WQM issues.
  - Analysis of financing would be required for effective WQM, and improved inter-departmental planning would be necessary to improve the allocation and use of funds.
  - The 'polluter pays principle' would apply.
  - Administrative penalties would be used.
24. The policy response would address the following:

- Municipalities would need to be incentivised to address WQM and to re-look at funding/grants in collaboration with the Department of Cooperative Governance and Traditional Affairs (COGTA) and National Treasury (NT)
  - Mine rehabilitation costs
  - Water use licence application fee costs
  - Partnerships with the private sector would need to be built and incentivised
  - Innovative funding models (e.g. climate change finance, green technology funds and partnerships with relevant finance institutions).
25. Chapter D addressed knowledge and information management and covered the rules and requirements for the following, which would be undertaken in partnership with other government departments, civil society and business:
- Monitoring, evaluation and reporting on waste water quality and WQM
  - Citizen-based monitoring
  - Public access to information
  - Research and innovation
  - Capacity building and training.

### **Legislative implications**

26. Certain aspects of the policy would require legislative amendments before they could be implemented to allow for the:
- Reclassification of the management class
  - Declaration of protected water resource areas
  - Categorisation of polluting industries based on risk
  - Promulgation of a Money Bill by the Minister of Finance for the Waste Discharge Levy
  - Administrative penalties.

### **The way forward**

27. The WQM Policy Edition 2 would require further inputs from wider stakeholder groups and the public. The policy would be published for public comment, which ultimately would feed into the Legislative Bill.

### **Questions/Responses**

28. A query was raised whether the water quality performance report was missing from the Inception phase. Ms Jay responded that the topic is covered in the Review of WQ and WQM Challenges report.
29. Ms Liefferink commented that from civil society's point of view there were many challenges related to water quality e.g. forums were poorly attended due to capacity constraints. Civil society did not know how to escalate problems from forum level (e.g. who to report to), and many civil society organisations had lost confidence in the process. She queried how civil society could be capacitated and whether this would be by information as well as by financial support and capacity building to develop technical expertise.

Ms Brisley responded that the aspect of water stewardship needed to be entrenched in the overall approach not only in terms of WQM but also through the way in which water and sanitation were managed in the country. The catchment management agencies play a strong role at the local level and at sub-catchment management forums. The issues of power, participation, responsibilities and partnerships would need to be worked out at that level. In the Western Cape, water stewardship had already begun with partners for the Breede and Gouritz rivers. There would need to be a formal agreement and standards set when a stewardship approach was followed. DWS would like to establish the principle in the policy. During implementation, DWS would need to look at how the will of leaders in a catchment management area could be implemented. These principles had already been successfully used and implemented not only in South Africa but also in other countries.

30. Ms Liefferink commented that insofar as the reclassification of management classes that would flow from the policy was concerned, an RQO numerical limit determination was currently being undertaken for the Crocodile West area. She queried whether the class would need to be reclassified. This query also related to the resource quality objectives for the Vaal River that had recently been published.

Mr Viljoen advised that the Policy provided the intent of what DWS was attempting to achieve in going into the Strategy phase and that the idea was not to redo any classifications. The hierarchy in WQM decision-making had always been that a prevention/precautionary approach should be followed that would look at waste minimisation, recycling, reuse, minimum effluent standards, minimum requirements. If these could not be met, a catchment-based approach would have to be used. The National Water Act did not prevent a class from being reviewed; it only stated that classifications, policies or strategies could be reviewed.

31. Ms Liefferink commented that with regard to partnerships, big businesses such as mining or polluting companies had vast economic power and that partnerships could thus perhaps not be equitable, just or fair. She queried how a partnership with a big business could be just and fair without discriminating against civil society that did not have much economic power.

Ms Brisley responded that with regard to mining, the Strategy would need to see how the playing fields could be levelled, but that DWS would need to look at the equity, fairness and sustainability among big and small business.

32. Mr van Staden enquired whether the policy would be binding on all state entities in future and what the policy response would be for state entities that did not adhere to the policy.

Mr Viljoen responded that a gazetted policy was applicable to all entities and that they would be bound by the intent of that particular policy. This project had been initiated from an operational perspective and the gazetting thereof would run in parallel. If it went to the Ministerial Cluster, the Cluster would decide whether the policy could be gazetted. If gazetting were to be delayed for whatever reason, DWS would have to deal with that internally. Should there be entities that did not confirm, this would be an encroachment and would become a control issue.

33. Ms Liefferink advised that policies and strategies were not being enforced and that policy could only be enforced once it had been approved by Cabinet. This was proving to be a challenge.

Mr Viljoen responded that after this Strategy process, certain matters would need to be legislated to ensure that they were enforced.

Ms Brisley commented that DWS did have legislative instruments but that the issues were related more to implementation. Some legislation had not yet been implemented, however through the WQM Policy and Strategy, legislation would be strengthened which would facilitate the implementation of WQM. Good instruments had been put in place and DWS was aware of the number of treatments works and levels of capacity of those in charge. The Blue/Green Drop programme had made significant progress over the last ten years. Certain municipalities were not functioning at the level they should, and DWS was working with them to improve on this.

Mr Viljoen reported that DWS had an official policy position on how it dealt with local government, and a policy on governance would be provided to provincial government officials.

34. Mr Buthelezi commented that DWS should ensure the people on the ground to implement policies and enforce penalties. One of the challenges was to build the right capacity within the regional areas.

Mr Viljoen responded that all the provinces or regional offices had expressed the same opinion on capacity. Many staff members were over-taxed with various line functions and this was a matter that would need addressing going forward.

35. Mr Vetli advised that a different outcome could not be expected if the same principles continued to be implemented as in the past. There were already incentives in place for municipalities; approximately R800 billion had been promised for infrastructure which was not only for roads, but also for sewerage works. It was common knowledge that many sewerage works were overloaded and that monies allocated for upgrade purposes had not been applied. The Green Drop certification process was an incentive tool but this had not been further pursued. He referred to the Kingfisher project and suggested that DWS should look at moving the WQM function from municipalities to other organisations such as ERWAT. In this regard he referred to the Netherlands, which had successfully transferred sewerage works management from municipalities to other organisations that were better equipped.

Mr Viljoen advised that the above had been the subject of debate at various forums and that the Strategy would need to address this matter.

36. Mr Mporetji mentioned that financial provisions would have to be made for mine rehabilitation and that this would need to be sufficient for their approach to water quality management.

Mr Viljoen replied that this had been the subject of discussion for many years between the strategic partners network where, for example, the Upper Olifants River had been identified as a case study to look at how things could be done differently. New regulations compel mines to make provision for water quality management, but DMR needs to be capacitated to deal with the issue. The Policy stated that water quality was the responsibility of everyone and DWS would need to inform all sectors of their mandates and educate them on how they could assist DWS in realising its mandate for quality water. This would apply not only to DMR but to other departments as well such as the DoH.

37. Mr Makwela queried what the intent of the department was on financial provision for mining water rehabilitation.

Mr Viljoen advised that DWS would need to be satisfied that water quality issues were being dealt with appropriately. The DEA was currently looking at the implementation of environmental levies, as was the DMR; however, the Strategy would need to dictate what DWS would do regarding water management and quality issues.

38. A concern was expressed that attention appeared to focus more on water issues related to mining, but little had been said about agriculture and municipalities. Policies and strategies must be implemented and enforced.

Mr Viljoen responded that DWS was aware that water quality management extended further than mining and therefore policy was necessary to address matters at local government level and in the agriculture and other sectors. South African rivers do not meet standards in terms of pollution and salinization. With respect to salinization, mining was not the only sector that was being targeted on waste water treatment and quality.

#### **OVERVIEW: WATER QUALITY AND THE NWRS3 (DR MAGDA LIGTHELM, DWS)**

39. It was envisaged to develop a National Water and Sanitation Strategy every five years, which would be followed by the development of strategy sector and thematic implementation plans. Monitoring, evaluation and reporting on strategic actions, key performance indicators and outcomes would be addressed on an annual basis, followed by a mid-term review every three years during the implementation process to look at lessons learned and where improvements could be made. Water quality was regarded as a fundamental consideration in water resource management and thus WQM had been integrated into relevant topics throughout the document. Implementation plans included contributions from the agriculture, private sector/business and mining, energy and forestry sectors.
40. The NWRS3 would manage sustainability, establish monitoring programmes for the protection of ecological health as per water use authorisation, protect riparian and wetland buffers and critical groundwater recharge areas, and conduct sewage plant audits within the various



sectors (aligned to the Green Drop programme) to ensure compliance and rehabilitate strategic water ecosystems to support water quantity and quality.

41. Although implementation had been slow, the willingness of sectors to participate in the implementation of the WQM had become evident. The Water Research Commission (WRC) in partnership with the South African National Biodiversity Institute (SANBI), the Department of Environmental Affairs (DEA), Natural Resources Management (NRM) of the Department of Forestry and Fisheries (DAFF), the Department of Science and Technology (DST), eThekweni Water and Sanitation and other institutions were working on projects to test the concept of ecological infrastructure and how water quantity and quality could be secured through the restoration of prioritised degraded ecosystems. The uMngeni Ecological Infrastructure Partnership (UEIP) had been established to explore alternative solutions to address water security for the KwaZulu-Natal coastal metropolitan areas. The Effluent & Waste Water Management (EWWM) working group was exploring opportunities for municipal effluent reuse as a possible resource to meet the burgeoning urban water demand.
42. The forestry sector would remove all commercial forest species growing inside a buffer zone adjoining wetlands and water courses and it would continue to rehabilitate all delineated buffer zones and water courses that had been cleared of alien and invasive plants.
43. The vision of the NWRS3 was to have sustainable, equitable and secure water for a better life and environment for all; to ensure that water was efficiently and effectively managed for equitable and sustainable growth and development in the country; and to provide excellent water supply and sanitation services to all citizens.

## Discussion

44. Ms Loefflerink commented that the project to develop the National Water and Sanitation Strategy had been awarded to a firm of consultants, whereas DWS could be capacitated with sufficient scientific and technical skills to carry out this task going forward. She further commented that it appeared as though monies were being spent on research and not on the findings of research; the objective would be to implement research findings. It was noted that the WRC was moving into innovation and that the DST had appointed a programme manager to the WRC. DWS had also identified the roles that could be played by other sectors such as agriculture.
45. Mr Veti commented that the National Water Act (NWA) required that a catchment management strategy (CMS) be developed for each water management area. There were, however, instances where the development of the CMS had not been aligned to the guidelines of the water strategy. He queried whether the guidelines could be updated to be in line with strategy.

Dr Ligthelm responded that this would be done in due course.

## PROCESS OF DEVELOPMENT FOR THE IWQM STRATEGY (TRACI REDDY, PEGASYS)

46. The fundamental norms, rules or values that represent what was desirable for the country in terms of WQM formed the foundation on which the Policy had been developed and would provide the overall vision and framework for WQM in South Africa for the next 20 years. Prioritised strategic actions would need to take place over a ten-year period in order to realise the envisaged WQM. The Implementation Plan would describe the various responsibilities, timeframes and resource requirements to achieve the strategic actions, after which it would be rolled out.
47. Five steps were followed in the development of the Strategy, namely to assess the WQM situation, to prioritise what was important, to define what must be achieved by setting goals and objectives, to determine accountability by addressing resource requirements and timeframes, and lastly to monitor, evaluate and adapt the strategy.

48. During the development phase of the IWQM Strategy Edition 1, SWOT analyses had been undertaken with targeted stakeholders and focus groups. During the testing stage and based on the fact that the WQM project had environmental and social impacts among others, engagements were planned with internal and external key stakeholders. Inter-departmental workshops as well as provincial roadshows in all nine provinces were being planned with more localised stakeholders that would afford them an opportunity to raise issues, concerns, comments and suggestions. Project governance would be addressed with the Project Steering Committee (PSC) and the Project Management Committee (PMC), the Project Administration Committee (PAC) and focus groups. Edition 2 of the IWQM Strategy would then be finalised.
49. The intent of the WQM Policy and Strategy was to provide South Africa with improved quality of water, attempt to prevent pollution, and support ecologically sustainable economic and social development and the responsible use of water resources. The strategic approach would need to address how the best impact would be achieved, how to ensure long-term momentum and what methods and ideologies would need to be adopted. All government departments, private sector and civil society together with DWS would have to play a role in determining and recommending measures that would need to be addressed to improve the water quality in the country. Good policies and instruments currently in place are not being implemented. The workshop was invited to suggest pragmatic and implementable ideas.

### **DEVELOPING THE STRATEGIC APPROACH (MR DEREK WESTON, PEGASYS)**

50. Mr Weston invited the workshop participants to note areas of concern regarding WQM in the following five categories:
- Policy and legislative frameworks
  - Governance
  - WQM practices
  - Financing
  - Knowledge and information management.
51. Key points raised were:
- Capacity building
  - Local authority accountability and compliance
  - Creation of collaboration agreements
  - Removal of tedious administrative processes
  - Mine rehabilitation
  - Issues around mine closures and the failure to issue closure certificates
  - Improved municipal services
  - Appointment of environmental and legal officers to deal with authorisations of fresh water licences, the impact of mines etc.
  - Review of media frameworks
  - Incentives versus enforcement
  - Decisive decision-making
  - Political buy-in and support
  - Strengthening of the control, monitoring and enforcement (CME) function
  - Proper costing and financing
  - Advocacy and reinforcement
  - Finalisation of institutional arrangements
  - Finalisation of waste discharge/waste management
  - Partnerships – collaboration across sectors and outside of government
  - Proper planning to alleviate future problems
  - Addressing the sources of pollution.

### **Discussion**

52. Mr Dickens commented that DWS currently had unfilled positions and unspent funds, but did not have the capacity to implement basic water resources in the field; appropriate personnel would need to be appointed to fill the various vacancies.

53. Ms Pillay reported that there was no national database for polluted areas.
54. Mr Buthelezi advised that there was little political buy-in and poor inter-governmental participation and that in order to have a decisive decision-making process, the necessary capacity to undertake the work would need investigation. He also recommended that a procedure plan be defined to ensure that all matters of non-compliance were dealt with appropriately; this would include funds allocated for a specific project and not spent. Capacity building at municipal level would need to be dealt with decisively once this matter had been addressed by DWS.
55. Mr van Staden commented that whilst issues regarding pollution and salinisation had already been identified, agricultural pollution negatively impacts on water quality and this should also be a point of focus.
56. Ms Liefierink concurred with Mr van Staden and commented that there was a need to stop generalising and to start determining how the failure of municipalities, for example, could be addressed. The same issues were endlessly discussed without positive actions to address the issues.
57. Mr Weston responded that the country tends to try and fix everything simultaneously but that results were not being realised. There was a need to identify critical items for which action plans would be built to deal with these over the next five years.
58. Mr Vetri commented that corrective measures need to be enforced with poor performing municipalities. The Green Drop is an incentive-based tool, but measures need to be put in place to rectify what is not being done correctly.
59. Mr Mporetji advised that there was a need to address the contents of the previous strategy that had not been achieved and that the Water Quality Status Report should be studied in conjunction with the strategy.
60. Ms Reddy advised that the responsibility for water sanitation did not lie solely with DWS and that collaboration with other departments and stakeholders was vital in order to break down the silos in which parties were working.
61. The need to look at the 'what' rather than the 'how' to improve WQM was stressed. There was a comment that there is a need to look at the behaviour and role that civil society should play, Strategies had been announced by government without any input from the public. Education and awareness should be addressed with end-users as well as within the various departments and societies. Water quality management should be unlocked and addressed across the board.
62. Mr Viljoen reported that in order to achieve integrated cooperative management and alignment of policies and legislation, engagements had already been held with the DEA, DAFF, DMR and DRDLR, and further engagements would take place with these departments.

### General

63. Mr Viljoen recommended that all delegates read the 'Stop Treading Water' report which covered the effective governance of South Africa's scarce water resources that play a crucial role in the realisation of the Constitutional rights to a healthy environment and the right to have access to sufficient good quality water. The report also covered the stress on water resources and their management, and the extreme capacity and other challenges the state faced in meeting its obligations in relation to water governance. The report had made good recommendations such as improving the quality of authorisations, integrated water use licencing and increasing the effectiveness of the water tribunal. Mr Weston undertook to circulate the report.

**Action: Project team**

## PRIORITISATION OF STRATEGIC ACTIONS (MR DEREK WESTON, PEGASYS)

64. Mr Weston advised that an IWQM Strategic Prioritisation spreadsheet had been circulated. The spreadsheet was based on the root cause analysis, SWOT analysis, literature review and WQM Policy. Five key strategic objectives had been identified from the morning session and broken down into prioritised activities. These objectives were:
- S01: Improved alignment of policy legislative frameworks
  - S02: Improved governance framework
  - S03: Improved, efficient and effective WQM practices
  - S04: Innovative finance mechanisms
  - S05: Improved knowledge and information management.
65. Mr Weston discussed the breakdown of the spreadsheet and requested the participants to prioritise the list of interventions in terms of high, medium or low importance for WQM and to add any interventions that might be missing. The consolidated spreadsheet would be circulated to all attendees and stakeholders (Appendix 4).

**Action: Project team**

## CLOSURE AND WAY FORWARD

66. Mr Viljoen reported that a PMC meeting was scheduled for 7 September 2016. A table with the provincial workshop dates and venues would be circulated in due course.
- Action: Project team**
67. Ms Liefferink advised that the South African Human Rights Commission in collaboration with the United Nations would be holding a workshop in September 2016 on the enforcement of non-compliances, and that this would include the National Water Act. She undertook to send a copy of the workshop brief to Mr Viljoen for further distribution.
- Action: Ms Liefferink, Project team**
68. Mr Viljoen and Mr Weston thanked everyone for their attendance and participation, and commented on the good interaction with the diverse group.
69. The workshop closed at 15:00.

**APPENDIX 1: LIST OF ACRONYMS**

CMA	Catchment management agency
CMS	Catchment management strategy
COGTA	Department of Cooperative Governance and Traditional Affairs
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
DoH	Department of Health
DRDLR	Department of Rural Development and Land Reform
DWS	Department of Water and Sanitation
EIA	Environmental Impact Assessment
ERWAT	East Rand Water Care Company
IWQM	Integrated water resource management
NT	National Treasury
NWA	National Water Act
NWRS	National Water Resource Strategy
PAC	Project Administration Committee
PMC	Project Management Committee
PSC	Project Steering Committee
SO	Strategic Objective
SWOT	Strengths, weaknesses, opportunities and threats
WDCS	Waste Discharge Charge System
WQM	Water Quality Management
WQ	Water quality
WRC	Water Research Commission

**APPENDIX 2: MATTERS ARISING FROM IWQMS POLICY WORKSHOP (26 AUGUST 2016)**

<b>Matter arising</b>	<b>Responsible party</b>
IWQMS Policy Workshop (26 August 2016), para 63: The 'Stop Treading Water' report would be circulated.	Project team
IWQMS Policy Workshop (26 August 2016), para 65: The consolidated spreadsheet (IWQM Strategic Prioritisation) would be circulated to all attendees and stakeholders.	Project team
IWQMS Policy Workshop (26 August 2016), para 66: A table with the provincial workshop dates and venues would be circulated in due course.	Project team
IWQMS Policy Workshop (26 August 2016), para 67: Ms Liefferink advised that the South African Human Rights Commission in collaboration with the United Nations would be holding a workshop in September 2016 on the enforcement of non-compliances, and that this would include the National Water Act. She undertook to send a copy of the workshop brief to Mr Viljoen for further distribution.	Ms Liefferink, Project team

**APPENDIX 3: COMMENTS FOR THE COMMENTS REGISTER FROM IWQMS POLICY WORKSHOP (26 AUGUST 2016)**

<b>Comment</b>	<b>Raised by</b>
IWQMS Policy Workshop (26 August 2016), para 29 & 61: There is a need to look at the behaviour and role that civil society should play in IWQM. Civil society could be capacitated to play their role, including information, financial support and capacity building to develop technical expertise. There is concern about how partnerships between civil society and big business for IWQM could be just and fair given the economic power of big business.	Ms M Liefferink, Federation for a Sustainable Environment
IWQMS Policy Workshop (26 August 2016), para 32: Will the IWQM Policy and Strategy be binding on all state entities in future, and what will be the policy response for state entities that did not adhere to the policy.	Mr J van Staden, Breede-Gouritz CMA
IWQMS Policy Workshop (26 August 2016), para 35: DWS should look at moving the WQM function from municipalities to other organisations that were better equipped (e.g. ERWAT).	Mr M Vet, Exxaro
IWQMS Policy Workshop (26 August 2016), para 36: Financial provisions would have to be made for mine rehabilitation	Mr S Mporetji, Goldfields
IWQMS Policy Workshop (26 August 2016), para 44: DWS should spend not only on research but also on implementing research findings.	Ms M Liefferink, Federation for a Sustainable Environment
IWQMS Policy Workshop (26 August 2016), para 53: A national database is needed for polluted areas.	Ms R Pillay, DWS
IWQMS Policy Workshop (26 August 2016), para 54: Capacity building will be needed at municipalities	Mr S Buthelezi, DWS Pongola-Umzimkulu Proto-CMA
IWQMS Policy Workshop (26 August 2016), para 54: Procedure plans are needed to deal with non-compliance.	Mr S Buthelezi, DWS Pongola-Umzimkulu Proto-CMA
IWQMS Policy Workshop (26 August 2016), para 59: The contents of the previous strategy that had not been achieved should be addressed. The Water Quality Status Report should be studied in conjunction with the strategy.	Mr S Mporetji, Goldfields

## APPENDIX 4: IWQM STRATEGIC PRIORITISATION

Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
1. Alignment with internal DWS policies	a. Alignment of WQM Policy with mine-water management, wetlands, energy, hydro-fracking, partnerships, etc., that provide an opportunity to strengthen WQM.	H	H	H	M	H	H ALIGN TO ENHANCE PROMPT DECISION MAKING INTERNALLY	M	H ALIGNMENT REVISION OF REMEDIATION FRAMEWORK IN LINE WITH DEA LEGISLATION ON CONTAMINATED LAND
	b. DWS to promote institutional/legal framework to intervene in failing water and sanitation functions at municipalities with a lead by COGTA and National Treasury.	H	H	H	H	H	H	H	H
2. Amendment of NWA/WSA	a. Amendment to allow for the reclassification of water resources	M	H	M	M	L	L	M	M
	b. Amendment to allow for declaration of protected water source areas	H	H	H	H	H	M AREAS OF HIGH AND VERY HIGH BIODIVERSITY SHOULD BE DECLARED "NO GO" AREAS FOR MINING	H PROVISION FOR INCENTIVES	M
	c. Amendment to allow for categorising of polluting industries	M	L	M	M	M	M	M	H
	d. Amendment to allow for the promulgation of	H	H	H	M	H	L	H	H DELAY WDCS IMPLEMENTATION



Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
	a Money Bill								
	e. Amendment to allow for administrative penalties	H	H	M	H	H	L	H	H ISSUE SPOT FINES OR ADMISSION OF GUILT FINES
3. Alignment of policies and legislature outside of DWS	a. Alignment with The Department of Environmental Affairs (DEA) - National Environmental Management Act (NEMA) and Environmental Impact Assessments (EIAs)	H	H	H	H	L	H	M	L ALREADY IN PROGRESS
	b. Alignment with the Department of Agriculture - Conservation of Agricultural Resources Act, (CARA);	M	L	M	L	L	H	M	M
	c. Alignment with The Department of Mineral Resources (DMR) - Mine-water Policy and the Mineral and Petroleum Resources Development Act (MPRDA);	H	H	H	H	H	H ALIGNMENT WITH THE NNN IN TERMS OF THE NNRA IN ORDER TO ADDRESS URANIUM AND ITS PROGENY IN THE WITWATERSRAND MINE WATER. URANIUM IS BOTH CHEMICALLY TOXIC AND RADIOACTIVE	H	H PARTICULARLY WITH MINE REHAB & CLOSURE
	d. Alignment with The Department of Rural Development and Land Reform (DRDLR) – Spatial Planning and Land Use	M	H	M	L	M ALSO MUNICIPALITIES – SPATIAL PLANS	M	H	M

Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
	Management Act (SPLUMA);								
	e. Greater alignment with the NWRS, SDG and NDP processes.	M	H	M	M	M	M	H	M <b>IN PROGRESS</b>
<b>4. Improve Intra-Departmental Governance</b>	a. Start a process formally institutionalising WQM in the Department	H	M <b>(CROSS CUTTING) FORMALISE COMMITTEE</b>	H	M	H	H	M <b>THESE EXIST BUT CAPACITY IS THE MAJOR CHALLENGE</b>	H
	b. Propose a more effective WQM organisational structure	H	H	L	L	H	M	M	H
	c. Integrate and align WQM protocols, reporting guidelines etc.	H	M	H	M	H	H	M	H
	d. Promote the integration of water quality and water quantity in WQM	H	H	M	L	H	H	H	H
	e. Establish, capacitate and ensure delegation of appropriate powers/functions to the CMAs with immediate effect	H	H	H	H	H	L	M	H
	f. Formalise structures and processes and resource regulatory actions across all spheres of	H	H <b>CLUSTERS &amp; CABINET</b>	H	M	H	H	H	H

Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
	Government								
	g. Formally address gaps and overlaps between statutory, regulatory and oversight mandates related to WQM	H	L	H	M	H	H	M	H
	h. Formalise and institutional/legal framework for DWS intervention in municipalities with failing water and sanitation functions	H	H	H	H	H	H	H	H
5. Inter-Departmental Governance	a. Engagement with DEA, DAFF, DMR, DoH, DTI, NT, DoE, DRDLR to embed the intergovernmental approach across all departments	H	L LOCAL GOVT. (SALGA & LG)	H COGTA & SALGA	M	H COGTA, DEPT. OF PUBLIC WORKS, JUSTICE CLUSTER	H INTEGRATION WITH THE SOUTH AFRICAN HUMAN RIGHTS COMMISSION (SAHRC) SINCE WATER RIGHT TO DIGNITY, RIGHT TO ACCESS TO INFORMATION SEC.24 OF THE BILL OF RIGHTS ARE RELEVANT TO DWS AND THE SAHRC. THE PUBLIC PROTECTOR OUGHT TO BE INVOLVED IN THE CASE OF SYSTEMIC NON-ENFORCEMENT OF NON-COMPLIANCE BY DWS	H	M BEING DONE – NEEDS TO BE BUILT ON
	b. Identify and clarify roles and responsibilities	H		H	M	H	M CONFUSION RE-WHO IS RESPONSIBLE FOR WHAT. DWS OFFICIALS TRANSFER THEIR DUTIES TO OTHER DEPARTMENTS OR SUB-DEPARTMENTS WITHIN DWS WITH – AS – A CONSEQUENCE NO ACTION TAKEN	H	H
	c. Establish an intergovernmental committee to	H	RELATED	H	L	H	L	H	H

Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
	ensure coordination of the new approach (if cannot be subsumed into existing structures)								
	d. Develop a draft ToR for discussion with relevant government departments (DEA, DAFF, DMR, DTI, DoE, DoH, NT)	H		H COGTA & SALGA	L	H	L	H	M
	e. Invite relevant departments to appoint representatives and agree on governance	H		H	L	H	L	H	H HIGH LEVEL DELEGATION TO MAKE DECISIONS
	f. Develop an intergovernmental implementation plan with clear roles and responsibilities	H		H	L	H	L	H	H
	g. Set up and run meetings on regular basis with regular reporting on progress.	H	CAUSES MEETING FATIGUE/RATHER CONSISTENT	H	L	H	H MEETINGS SHOULD IDENTIFY ACTIONS TO BE UNDERTAKEN WITHIN PRESCRIBED TIME FRAMES	H	M
	h. In consultation with relevant Departments, determine what the reporting requirements are, i.e. who reports of what, frequency of reporting etc.;	H	(PART OF TOR)	H	L	H	H	M	M ONCE B IS ACHIEVED, THIS SHOULD BE EASIER TO DO

Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
	i. Outline the reporting requirements necessary for submission to intergovernmental committee on actions taken under the implementation plan	H	(PART OF TOR) WHAT POWER WILL THE COMMITTEE HAVE?	H	L	H	H	M	M
	j. Report to Minister and Parliament on the intergovernmental approach and progress on implementation.	H	H CLUSTERS	H	L	H	H	H	H
6. Governance for Civil Society	a. Formalise governance framework for active citizenry for monitoring WQM	H	H 1. ALSO PRIVATE SECTOR 2. NOT VERY EASY TO LEGISLATE OTHER SECTORS, THEREFORE THROUGH INTER-GOV. RELATIONS?	M B. CLARIFY POWERS OF FORUMS I.T.O ISSUES	L	H	H CITIZENS OUGHT TO BE CAPACITATED TO CARRY OUT MONITORING. NGO'S ALREADY ACTIVE IN THIS ACTIVITY OUGHT TO BE GIVEN PRIORITY IN CAPACITY BUILDING	H	H
7. Integrated Catchment Approach	a. Promotion of the integration of water quantity and water quality in WQM	H	H	M	M	H	H	H	H
	b. Simplification of the licencing processes and integration of water use licence	H	H1. INCREASES FREQUENCY & WAY OF REPORTING 2. INCLUDE EWS	M	H	H	H	H	H
	c. Promotion of an integrated, sectoral planning	H	H DIFFERENT SECTORS TO SHARE & PLAN	H	M	M	H WULA'S MUST INCLUDE THE CUMULATIVE IMPACTS ON	H	H

Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
	approach		TOGETHER)				THE REGIONS WATER QUALITY AND QUANTITY, WHICH MUST ADVISE THE AUTHORISATION OF A WUL		
	d. WSDPs and IDPs should give WQM priorities prominent consideration	H	H	H	M	H	H	M	H MUNICIPALITIES TO DEVELOP A WATER QUALITY IMPROVEMENT PLAN
	e. Establishment and capacitation of CMAs in the development of CMSs to provide opportunity for integrated, sectoral planning	H	H USERS AT THE CENTRE OF PLANNING	H	M	H	L CMAs SHOULD IMPLEMENT THEIR MANDATES IN THE CASE OF A POLLUTER NOT REMEDYING THE POLLUTION BY EFFECTING THE REMEDIATION AND RECOVERING THE COST FROM THE POLLUTER	M	H
8. Regulation	a. Regulation of land use will, where appropriate, be used as an instrument to minimise pollution from land-based sources.	H	H	H	L	H	M	M	H
	b. Determine the prohibition of certain land use activities in sensitive or important water resources, such as in the Strategic Water Source Areas	H		H	L	H	H	H	H
	c. Adopt a risk- based approach	M		M	M	M	H	M	H
	d. Prioritise eutrophication for immediate regulatory action at the national	H		M	M	H	H	M	H

Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
	level								
	e. Prioritise salinization for immediate regulatory action at the national level	M		M	L	H	H	M	M
	f. Prioritise acidification and alkalisation for immediate regulatory action at the national level	H		H	L	H	H	M	H
	g. Prioritise sedimentation for immediate regulatory action at the national level	M		M-L	L	H	M	M	M
	h. Prioritise urban pollution runoff for immediate regulatory action at the national level	H		H	M	H	M	M	H
	i. Stricter regulatory requirements for mines and industries	H		M	M	H	H WHAT IS REQUIRED IS STRICTER ENFORCEMENT AND NOT NECESSARILY STRICTER REGULATORY REQUIREMENTS	H PLUS ENSURE COMPLIANCE	H WHY ONLY MINES & INDUSTRY? INCLUDE ALL WU
	j. Mines categorisation in relation to their potential water quality impact	M		H	L	L	H	M	M
	k. DWS will introduce a water pollution register to incentivize polluters to reduce their	H		M	M	M	H	H	H

Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
	pollution								
	I. DWS to formalise approach to diffuse/non-point sources of pollution	H		H	H	H	H	H	M
9. Finance Mechanisms	a. Government to broaden funding mechanisms by looking for innovative solutions, such as the Global Climate Change Finance, Green technology financing, administrative penalties etc.	H	H	H	L	H	H 16. IMPROVE THE RESILIENCE OF ECOLOGICAL INFRASTRUCTURE. UNLOCKING MULTI-SOURCE INVESTMENTS H	M ACTUAL USE OF MONEY EAR MARKED FOR REHAB, REMEDIATE	M
	b. DWS will conduct an analysis of the financing required for effective water quality management, similar to the Water Investment Framework, and will examine current funding against realistic needs.	H		H	L	H	H	M REFERENCIN G MONEY FOR SPECIFIC PURPOSES	H
	c. Consideration of the requirements for funding green and grey infrastructure	M		M	M	M	H	L	M
	d. Financial incentives (including donor funds) for municipalities to	H	L IMPROVE REVENUE COLLECTION	H	L	H	H	M	L IT IS THEIR RESPONSIBILITY TO ADHERE TO TARGETS



Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
	maintain declared targets, and build in operation and maintenance budgets								
	e. The waste discharge charge strategy should be implemented with immediate effect.	H	H	H	M	H	H	H	H
	f. DWS will work with National Treasury and COGTA to ensure sufficient funding through municipal grants and municipal budgets for the rehabilitation and effective operation and maintenance of WWTW and ensure the development of sufficient strategies to address dysfunctional municipalities' inadequate waste water treatments plants and their operation and maintenance.	H	EAR MARK GRANTS AND DWS ENTITIES TO IMPLEMENT	H	M	L HAPPENING NOW	H	H	H LOOK INTO DIFF APPROACH
	g. DWS will, with NT, DMR and DEA, investigate the costs of long-term water pollution from closed mines, and determine any required changes to the	H	M	H	M	H	L	M WE HAVE MORE THAN ENOUGH INFO TO START WORK AT LARGE SCALE	H

Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
	financial provisions for mine rehabilitation, as well as the role of DWS and CMAs in approving the rehabilitation work required for closed mines to minimise any future water pollution.								
	h. DWS will revise licence use application fees to reflect the risk level resulting from the proposed activity, and the resulting intensity of investigation required before authorisation can be granted.	M	H	M	M	H	L REVIEW THE LICENSE PROCESS TO BE SMARTER AND NOT COSTLY	M	L
	i. Investigate financial incentives for water re-use	H		M	M	H	H DEVELOPMENT OF INNOVATIVE AND EMBRYONIC TECHNOLOGIES IN THE AMD FIELD AND RECOVERY OF METALS	H	H
10. Partnership and Stewardships	a. Government/DWS to develop a more formalised approach to partnerships	M	H	M	M	H	ENABLE THE DEVELOPERS TO RESOLVE WATER QUALITY ISSUES WITHOUT BUREAUCRACY	M	M
	b. DWS to communicate more effectively around their stewardship initiatives, such as Strategic Water Partners	M	H	M	L	M	M SWPN SHOULD INCLUDE CIVIL SOCIETY ORGANISATIONS AND NOT ONLY WWF AND INDUSTRY	M	H

Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
	Network (SWPN), eMalahleni Water Reclamation Project, Emfuleni Project amongst others.								
	c. DWS will build partnerships with the private sector and where possible to mobilise private sector funding to support management and rehabilitation activities.	H	H	H	L	M	M <b>PARTNERSHIPS SHOULD INCLUDE CIVIL SOCIETY WITH FAIRNESS AND EQUITY IN PARTNERING WITH INDUSTRIES WITH VAST ECONOMIC POWER AS OPPOSED TO POORLY FUNDED NGO'S AND CSOs</b>	M	H
<b>11. Knowledge and Information</b>	a. DWS will report annually on the state of water quality in the country, including the performance of local government management of waste water, through the Green Drop report.	H	H	H	H	H <b>1. MUNICIPAL STRATEGIC SELF ASSESSMENT 2. MUNICIPAL PRIORITY ACTION PLAN – ENFORCE THE IMPLEMENTATION OF MPAP</b>		H	H
	b. DWS, with the WRC and CMAs will lead the development of a programme to create and support citizen based monitoring programmes to augment the government monitoring systems	M	L <b>HAPPENING ALREADY</b>	M	M	M		M	H

Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
	c. Water quality data collected by public sector institutions will be made available to the public	H	H	H	M	H	H THE DATA SHOULD BE EASILY ACCESSIBLE AND THE DATA SHOULD INCLUDE AUDIT REPORTS, ENVIRONMENTAL INCIDENTS, PRE-DIRECTIVES, DIRECTIVES AND CLOSE OUT REPORTS	H	H
	d. DWS/CMA to use social media to mobilise public knowledge banks and counteract negative media around droughts and other crises.	L	H	H	L	L		M	L
	e. Improved and multi-institutional WQM awareness campaigns, led by DWS	M	M LED BY COMMUNITIES AND PRIVATE SECTOR	M F. CREATE WHATSAPP TYPE APP FOR USE BY PUBLIC	L	H	IMPROVED AND MULTI INSTITUTIONALISED WATER QUALITY AWARENESS	M	M
12. Compliance, Monitoring and Enforcement	a. DWS will update WARMS and put in place the necessary mechanisms, through CMAs and regional offices, to ensure that the information is kept up to date.	H		H	M	H WATER QUALITY ALSO		M	H
	b. An inter-governmental CME system will be instituted, with the roles of the relevant bodies formalised under the Intergovernmental Relations Framework Act	H		H	L			H	H

Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
	(IGRFA), including DWS, CMAs, DEA/PDEAs, DAFF/PDOAs, DMR and local government.								
	c. The creation of integrated regulatory water monitoring committees will assist in integration of CME	H		H	L	H		M	H
	d. DWS will implement its protocol for addressing breaches of licence conditions by municipalities and will hold municipalities accountable for failure to meet their licence conditions	H		H	H	H	H DWS WITH DMR WILL IMPLEMENT ENFORCEMENT OF NON-COMPLIANCES OF WUL'S BY BOTH MUNICIPALITIES AND INDUSTRY (E.G. MINING INDUSTRY) ENFORCEMENT MUST INCLUDE CRIMINAL CHARGES FOR NON-ENFORCEMENT OF DIRECTIVES	H	M <b>NEED TO REVISE ENFORCEMENT PROTOCOL</b>
	e. DWS should work closely with COGTA and the provincial departments to ensure that municipalities comply with the NWA	H		H	H	H		H	M
	f. DWS will increase its capacity for CM&E including	H		H	H	H		H	H
	g. DWS will increase its capacity for CM&E by employing required staff;	H		H	H	H <b>DO AWAY WITH MORATORIUM</b>	ATTRACT AND RETAIN SKILLED STAFF AS CMSE	H	H
	h. DWS will increase its	H		H	H	H		M	H

Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
	capacity for CM&E by ensuring they are well trained through continuous on-the-job training; and								
	i. DWS will increase its capacity for CM&E by putting in place joint programmes of CM&E with DEA/PDEAs.	H		H	M	H		M	H
<b>13. Monitoring , Evaluation and Reporting</b>	a. DWS, in collaboration with DEA, CMAs and other relevant government entities, will develop a national plan for water quality management that clearly sets out the roles and responsibilities of different government departments and spheres of government in the collection of raw water quality data and the provision of requisite data in a standardised form to DWS, who should be responsible for the national assessment of water quality status based on this data.	H		H	M	H		H	M  HAVE INTEGRATED REGIONAL MONITORING COMMITTEES IN PLACE

Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
	b. DWS, with the WRC and CMAs will investigate the options provided by recent technological developments to improve water quality monitoring across the country	H		H C. RECORD EFFECTIVENESS & EFFICIENCY OF STRATEGY IMPLEMENTATION (KPI'S OUTCOME, etc.)	H	H		M	H
14. Research and Innovation	a. National initiative to improve the uptake of research and innovation to reduce water quality impacts, and improve overall water efficiencies across all sectors	M	H INCLUDED IN THE ROADMAP	M	M	M		M	M
	b. Develop a national water quality research plan	M	L	M	H	M		M	M
	c. Promote the transfer of technologies and tools for the benefit of the water sector and the alignment of applied research priorities throughout the water value chain	M	H 1. GAP IN LEGISLATION TO SUPPORT THE TECHNOLOGY 2. ALLOW PRIVATE SECTOR TO R&D WITHOUT ALL REGULATORY	M	M	M		H	M
	d. Investigate and improve funding for water quality research	M		M	H	H MODELLING OF WATER QUALITY		M	M
	e. Promote innovation and	H	H	H	H	M	M-H PROMOTE NOT ONLY RESEARCH BUT	M	M

Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Grou p 3	Group 4	Group 5	Group 6	Group 7
	knowledge sharing to supporting new and appropriate technology						IMPLEMENTATION OF FINDINGS AND RECOMMENDATION OF RESEARCH REPORTS		
	f. With the Department of Science and Technology, continue to develop and enhance the impact of the Water Technologies Demonstration Programme (WADER).	M	H	M	L	M		M	M
15. Capacity Building and Training	a. DWS to reinstitute WQM Training Course	H	H NOT ONLY FOR WQ	H	L	H		M	H
	b. DWS and DEA will develop appropriate on the job training programmes for officials from all relevant state institutions to improve the capacity of government for WQM	H	H	H	H	H		M	H
	c. DWS, in partnership with DEA, will make training available to civil society organisations active in the water sector to enable their informed participation in water quality management processes,	H	H	H	L	H		M	H



Considerations	Actions/ Interventions	Combined Results	Group 1	Group 2	Grou p 3	Group 4	Group 5	Group 6	Group 7
	particularly in areas where water quality is under severe threat.								
	d. Improved and supported civilian science initiatives, such as Adopt-a-river programme	H	H	M	H	M		H	H
	e. DWS, in collaboration with COGTA, will develop regulations to ensure the professionalization of key water services positions in Water Services Authorities to ensure that the staff responsible for the management of water and waste water systems at municipal level have the necessary competencies.	H	H	H	H	H		M	H
	f. DWS will continue to provide bursaries for students to study water quality - related subjects at universities in order to provide a pool of qualified recruits for the state.	H	H	H G. DEVELOP ONLINE TRAINING TOOLS OF INFORMATION PRODUCTS (POSTERS, BROCHURES, VIDEOS) FOR A RANGE OF NON-TECHNICAL TO TECHNICAL PEOPLE (i.e. SCHOOL KIDS, ADULTS, SCIENTISTS FROM OTHER DISCIPLINES) H	H	H		M	H POST GRAD RESEARCH – DWS TO GIVE INPUT TO WHAT IS. RESEARCH CAN ALIGN TO DWS REQUIREMENT



## **APPENDIX D-2**

### **PROVINCIAL WORKSHOPS**



## DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS) - WP10978

### Implications of the WQM Policy and IWQM Strategy for Implementation

#### Regional Workshop: Eastern Cape

12<sup>th</sup> October 2016 | King David Hotel East London | 09h00 – 15h45

### AGENDA

**Chairperson:** Provincial Chair/P. Viljoen

**Purpose of Meeting:**

- To create awareness regarding the WQM Policy and the IWQM Strategy;
- To obtain comments and inputs into the WQM Policy and the IWQM Strategy;
- To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;
- To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and
- To outline the way forward.

Item	Time	Topic	Responsible
	09h00 – 09h30	Arrival Tea and Coffee	
1	09h30 – 09h50	Welcome, Introductions and Purpose of the Meeting	Chair
2	09h50 – 10h30	Background to Water Quality Management in SA <ul style="list-style-type: none"><li>▪ <i>History, Issues and Challenges</i></li><li>▪ <i>Discussion on Regional Context</i></li></ul>	DWS Project Team
3	10h30 – 11h30	Development of the IWQM Strategy <ul style="list-style-type: none"><li>▪ <i>WQM Policy Responses</i></li><li>▪ <i>IWQM Strategic Responses</i></li><li>▪ Discussion</li></ul>	Pegasys
4	11h30 – 12h45	<b>Workshop 1: Strategic Actions: Review and Prioritisation</b>	Facilitator: Pegasys
	12h45 - 13h30	Lunch	
5	13h30 – 14h45	<b>Workshop 2: Implications for Implementation</b>	Facilitator: Pegasys
7	14h45 – 15h10	Feedback Discussion	Pegasys
8	15h10 – 15h30	Way forward and Closure	Chair



**water & sanitation**  
 Department:  
 Water and Sanitation  
 REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF WATER AND SANITATION  
 DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS)  
 (WP10978)  
 MINUTES OF ROADSHOW WORKSHOP**

**Date:** 12 October 2016

**Time:** 09:00–15:30

**Venue:** King David Hotel, East London

**Present:**

Petrus du Preez	Agri Eastern Cape
Maurice Bila	Amatola Water
Dr Nikite Muller	Amatola Water
Deanne Karshagen	Buffalo City Metropolitan Municipality
Luyolo Ndanze	Buffalo City Metropolitan Municipality
Theunis Schoeman	Buffalo City Metropolitan Municipality
Gcobisa Matakane	Chris Hani District Municipality
Mfesane Nkwenkwezi	Chris Hani District Municipality
Mpfariseni Kennedy Ramulifho	Chris Hani District Municipality
Noluvuyo Nanto	Chris Hani District Municipality
Zola Dolomba	Chris Hani District Municipality
Anathi Mgobozi	DWS
Ncumisa Mnotoza	DWS
Philip de Wet	DWS
Sonwabile Menyelwa	DWS
Thandile Ngcume	DWS Communication
Landile Jack	DWS East London
Simphiwe Simunca	DWS Mtata
Mzukisi Maneli	DWS Port Elizabeth
Pieter Viljoen	DWS Water Quality Planning
Bolekwa Kama	DWS: Proto-CMA
Mmabatho Mampane	DWS: Proto-CMA
Nqabomzi Xotyeni	DWS: Proto-CMA
Ntombi Feni	DWS: Proto-CMA
Xolani Mtsolongo	DWS: Proto-CMA
Andrew Lucas	DWS: Regulation
Dr Cherie-Lynn Mack	EOH Coastal and Environmental Services
Pierre Joubert	Gamtoos Irrigation Board
Mervin Olivier	GIBB Engineering
Bongani Makehle	Joe Gqabi District Municipality
Ncumisa Dingilizwe	Joe Gqabi District Municipality
Yola Ketezwa	Kumkani FM
Ntombi Tshialela	Makane Municipality
Jim Gibson	MGSM
Bongani Matomela	OR Tambo District Municipality
Wayne Selkirk	PCT
Derek Weston	Pegasys
Traci Reddy	Pegasys
Robyn Arnold	Project team
Frank Akamagwana	Rhodes University Institute for Water Research
Nelson Odume	Rhodes University Institute for Water Research
Notiswa Libala	Rhodes University Institute for Water Research
Pindiwe Ntloko	Rhodes University Institute for Water Research

## WELCOME, INTRODUCTIONS AND PURPOSE OF THE MEETING

Mr Andrew Lucas opened the workshop and welcomed everyone. DWS had implemented the National Water Resource Strategy (version 2) and was currently working to develop NWRS3, which would include sanitation. Questions had been asked about water quality in DWS, and this project (WQM Policy and IWQM Strategy) would form part of the roll out of the NWRS. Mr Lucas allowed a round of introductions.

Mr Weston noted that the purpose of the meeting was to:

- Create awareness regarding the WQM Policy and the IWQM Strategy
- Obtain comments and inputs into the WQM Policy and the IWQM Strategy
- Initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the water management areas
- Solicit initial inputs for the conversion of the IWQM Policy and the IWQM Strategy into practice
- Outline the way forward

## BACKGROUND TO WATER QUALITY MANAGEMENT IN SOUTH AFRICA

Mr Weston gave a presentation on the background to water quality management in South Africa.

South Africa is faced with many of the problems related to poor water quality; this may be attributed to the vast number of challenges we face with managing the various sources of pollution, including air pollution, agricultural drift and run-off, industrial wastewater discharges, urban run-off, and challenge with managing run-off from unserviced areas, mine water and sewage water.

Many factors contribute to the WQM challenges, including:

- Sources of water pollution are complex. There are varying sources of pollution (point source, diffuse) and water quality changes along the hydrological regime.
- Catchments are complex socio-economic systems, and some are shared watercourses: Sufficiently integrated and adaptive approaches within and across catchments should be implemented, which is currently lacking.
- Sufficient alignment and coordination is needed within and between government departments. WQM is hampered by poor coordination and conflicting approaches.
- There is insufficient finance for WQM. The available financial resources are insufficient and do not recognise the investment required to counteract economic harm.
- There is insufficient data and information management: Data sharing is a challenge, including transboundary-management. There is a challenge in ensuring that the public has access to information.
- There are capacity and skills constraints in the field of WQM

In response to the country's need to take an improved integrated approach to WQM, DWS has initiated a project to develop a national, integrated Water Quality Management (WQM) Strategy, but before the strategy could be developed the current WQM policies, which were needed in order to give direction to the strategy, would require revision. This is due to the fact that whilst innovative at the time of publication, the current policies (Water Quality Management Policies and Strategies in the RSA in 1991 and the 2006 Resource Directed Management of Water Quality Policy) are dated and not integrated, and need to be aligned with the current overarching policy and legislative frameworks, socio-economic trends and emerging global issues.

The contract for the project was signed on 4 October 2015 and would continue until September 2017. The project comprises five phases: Inception, Assessment, Policy, Strategy and Policy into Practice. The policy and strategy were being developed through an iterative process, whereby first editions of the policy and strategy would be sent out for comment, and would be amended in response to the comments received. The project was currently in the Strategy phase, which spanned from August 2016 until February 2017, which entailed revise, update & integrate existing WQM strategies based on inputs from Stakeholders & assessment phase

All documents produced were available on the DWS project website ([www.dws.gov.za/projects/iwqms](http://www.dws.gov.za/projects/iwqms)). The following documents had been completed to date:

- Inception Report
- Review of WQM Policies and Strategies
- Review of WQM Institutional Arrangements
- Review of WQM Instruments
- Note on the WQM Challenges
- Water Quality Glossary
- Capacity Building Strategy
- Stakeholder Communication Strategy
- Newsletters 1 and 2
- Note on the WQM Policy Principles
- WQM Policy (Edition 1)
- Note on the Strategic Framework

The identified water quality issues that need to be addressed through the WQM Policy and Strategy include: salinisation, nutrient enrichment and eutrophication, acidification and acid mine drainage, erosion and sedimentation, urban runoff pollution, litter and solid waste, microbial pollution, waterborne pathogens and human health, agrochemicals and toxic substances, dissolved oxygen and organic pollution, trace metals, hydrocarbon pollution, thermal pollution, nanoparticles and radioactivity.

There is already considerable knowledge and understanding of many of the priority water quality issues (e.g. eutrophication, salinisation) but many of the issues need more research (e.g. the impact of nanoparticles, metals, hydrocarbons and agrichemicals).

Impacts on water quality by industry, mining, municipalities, mining and urban wash-off were considered, and the following issues were identified:

- Municipalities: lack of maintenance of wastewater infrastructure, inappropriate technologies, 'unsexy' infrastructure, the need for financial incentives to attract industry, lack of enforcement, lack of ownership by affected communities, lack of appropriate bylaws, lack of adequate / appropriate urban planning, understanding of mandates is confused, capacity challenges, insufficient resourcing, labour challenges, poor budgeting/ not ring-fencing budgets, lack of political support, politically embarrassing, poor understanding of importance, unsustainable financial model, rapid urbanisation, supply trumps quality
- Industry: not meeting discharge standards in municipal environments, legacy water quality issues, wastewater treatment works (WWTW) technology inappropriate, municipalities treat industry as source of revenue, WWTW removes incentives to pre-treat, WDCA on hold, political pressure to attract industry, no incentives to treat, transfers responsibility to meet standards to local municipalities, lack of trust between industry and government, lack of enforcement, inappropriate licence conditions, lack of capacity, ineffective monitoring, limited communication, poor cooperative governance
- Agriculture: poor land use practices, over-irrigation, over-fertilisation, over-abstraction, varying contexts (e.g. small vs commercial, communal), extension services weak, poor enforcement, capacity challenges, dispersed spatial nature of agriculture, lack of financial resources, lack of accountability by both government and farmers, jobs trump environment and water quality, not understood to be a priority, poor cooperative governance
- Urban wash-off: degradation of wetlands, canalisation of rivers and the degradation of riparian areas and developments in floodplains; lack of maintenance of infrastructure; rapid growth in poorly serviced peri-urban dense settlements; lack of ownership by society; lack of enforcement and lack of bylaws; mindset of not needing to treat; lack of adequate / appropriate urban planning; understanding of mandates is confused; capacity challenges; insufficient resourcing, and spend requirements are huge; lack of political support; poor understanding of importance; rapid urbanisation; unsustainable financial model
- Mining: Existing mines not meeting water quality discharge standards; government facing significant challenges in managing impact of abandoned mines; uncertainty around mine closure funds and meeting new closure requirements; insufficient control monitoring and enforcement function at DWS (at national through to local level, also linked to capacity to implement, know-how to hold someone accountable and ability to write proper licence conditions); Weak technical capacity, with water quality officers not knowing how they fit in, inaccurate water use licences, not sure how to enforce, cannot read and interpret water data, lack of knowledge around protected

areas or understanding what that really means; Political interference in establishment of mines (e.g. unlicensed mines, establishment of mining in areas that are protected, competing mandates, short-term benefit overshadows long term sustainability); poor cooperative governance and mismatch in departmental mandates; insufficient financial resources

Future trends that with implications for water quality are anticipated to be: climate change, hydraulic fracturing, renewable energy, water–energy–food security nexus, growth of inadequately serviced densely populated settlements and water re-use.

A SWOT analysis identified 28 strengths, 62 weaknesses, 32 opportunities and 45 threats. The following priority actions are proposed in order to respond to the SWOT analysis:

- Promote integration of water quality and quantity
- Formalise cooperative governance structures, processes and resources for water quality regulatory actions
- Formally address overlaps of statutory/regulatory/oversight mandates that affect WQM
- Formalise institutional/legal framework for intervention in municipalities with failing water and sanitation functions
- Strategy and plan for sectoral partnerships and public–private partnerships
- Rolling engagement with DWS senior management on WQM
- Rolling public engagement on joint custodianship of the resource
- Intensify WQM capacity development across sectors
- Overhaul all aspects of water quality monitoring and data management
- Intensify all aspects of control monitoring and enforcement
- Mobilise ex-DWS budget funding of WQM initiatives.

In the international context, good quality water is the foundation for achieving the UN Sustainable Development Goals (SDGs) and further drives the need for an integrated WQM Policy and Strategy for South Africa, for example:

- Goal 1 & 2: No hunger – good water quality is required for the rural and agricultural sector for food production, which is a crucial step in poverty reduction
- Goal 6: Clean water and sanitation
- Goal 14: Life below water speaks to the health of our aquatic systems, which is fundamentally dependent on certain water quality requirements and is affected by changes in water quality.

The literature review of the international experience of WQM identified a number of trends:

#### Strategic alignment

- Water quality problems are increasingly shifting to non-point sources related to failing infrastructure
- Basin water quality rehabilitation and management is a long-term process requiring institutional capacity and financial sustainability, within broader water resources management
- Water resources crisis provides an opportunity to gain political will and momentum, but needs to be sustained
- Catchment WQM requires a combination of technical, regulatory, economic, financial and institutional interventions
- Influencing government financing mechanisms provides a critical means of enabling water quality action
- The SDG indicator process provides an opportunity to address water quality issues.

#### Coherent instruments

- Regulatory and strategic approaches are increasingly focusing on minimising pollution by being stringent on priority sectors
- Clean tech supported by green economy initiatives and financing mechanisms provides targeted ways of reducing pollution at source
- Coherent regulatory regimes and strategic institutional approaches supported by appropriate financial mechanisms and cooperative actions
- Natural (green) infrastructure is recognised as critical aspect of integrated management of water quality in urban and rural settings



- Various economic (and financial) approaches have been attempted, the selection of which should be depend on the individual context and may be targeted
- Good water quality monitoring enables enforcement and compliance, but this can be incrementally developed and funded.

### Partnerships

- Government needs to play a lead role in driving, coordinating and often financing the remediation, and not always just water quality managers
- Building long-term partnerships is fundamental to sustained and effective local solutions
- Basin institutions lead catchment rehabilitation/protection , through a range of rural and urban measures
- Alignment and consistency is an emerging challenge that requires cooperative governance and regulatory/strategic approaches (vertical and horizontal)
- Private sector has a crucial role to play in minimising its impacts on water resources, and collaborating through water stewardship partnerships
- Civil society has a key role

### **Discussion**

Pierre Joubert (Gamtoos Irrigation Board) commented that the municipality was putting waste water into a river that flows into their main dam. This had been reported to DWS numerous times and a directive had been issued, but nothing further had been done and the problem persists. In this case the Keiskamma municipality has four wastewater treatment works, none of which are properly functional. The municipality had been placed under administration for two years. During that time the sewage works were run satisfactorily by DWS and people were trained, but the situation had deteriorated again after DWS left. Mr Joubert commented that the problem was that one branch of government could not prosecute another. He asked whether there were any examples of negligent municipalities being taken to court.

Mr Weston responded that the challenges were related to finance and capacity.

Pierre Joubert (Gamtoos Irrigation Board) responded that the irrigation board pays an annual water resource management fee to cover the costs of DWS, including monitoring.

Petrus du Preez (Agri Eastern Cape) commented that the agricultural sector had in the past been guilty of using fertilisers and pesticides in a manner that polluted the water resource. The sector was now more accountable; for example, the four fruit export areas in the Eastern Cape have to comply with export regulations, especially for exports to the UK and Europe and have to meet certain standards. The use of pesticides and labour is checked several times a year. The aim was ultimately to move away from pesticides to eventual immunity, but such a soil and health approach would take time. The agricultural sector has considerable drive towards healthy clean water resources.

Mr Weston commented that this demonstrated the benefits of imposing standards and driving better practice, in that the sector would become more efficient and save costs.

Pierre Joubert (Gamtoos Irrigation Board) commented that the fruit export farmers had used consultants to advise on making the best use of the scarce water resource. The farmers would like to introduce organic farming on a larger scale, but there was limited demand.

Andrew Lucas (DWS: Regulation) observed that if municipalities wait long enough, DWS will pay the costs of repairing and upgrading their infrastructure. The National Water Act makes provision for recovering such costs, but it had not been possible to enforce this. Multilevel failures in municipalities require interventions at technical and managerial level. DWS used to have a rapid response unit was doing training in municipalities, but there is an inability to sustain things at various levels and the infrastructure is failing. A strategy is needed to determine all the levels at which intervention is necessary.

Bongani Makehle (Joe Gqabi District Municipality) commented on the need to strengthen intergovernmental relations, as prescribed by the sector-based legislative framework. However, elements of cooperative governance are missing and constitutionality supersedes. Intergovernmental

relations need to be strengthened and to involve engagement. Intergovernmental relations had not been strong at regulatory level.

## DEVELOPMENT OF THE IWQM STRATEGY

Ms Reddy gave a presentation on the development of the IWQM Strategy.

A series of steps was followed in developing the WQM Policy and Strategy:

- Outcome 1: Consensus on prioritised water quality issues was preceded by a high-level description a prioritisation of water quality issues
- Outcome 2: Identification of WQM challenges and gaps was preceded by a root cause analysis, insights from a literature review and WQM SWOT analysis
- Outcome 3: Foundation for policy, strategy processes was preceded by the consolidation and way forward.

The core concept of the WQM Policy is that water quality affects the economy and society's well-being. Water quality is a developmental issue. DWS is the sector leader in WQM, but everyone has a role to play, and a joint approach between government departments, the private sector (through initiatives such as the Strategic Water Partners Network) and civil society forms the basis of tackling the water quality challenges facing the country.

The Policy is a collation of existing policies as they relate to WQM, with stakeholder inputs and a literature survey used to identify gaps. It draws on the 1991 Water Quality Management Policies and Strategies in the RSA, the 2006 Resource Directed Management of Water Quality Policy, the National Development Plan, the National Water Act (NWA), the National Water Resource Strategy, the UN Sustainable Development Goals (Agenda 2063), current DWS policies and other departmental policies, including those of the DMR, DEA, DAFF and DRDLR. It was developed based on the information from the Assessment phase, inputs from the project committees, and importantly, inputs from stakeholder discussions. It strengthens existing policy, but also proposes several new positions, the largest being that WQM need to be an inter-governmental responsibility, with DWS as the sector leader. It is hoped that further consultations will strengthen the policy even more.

The aim of the WQM Policy is to:

- Elevate water quality and water quality management on the country's agenda.
- Formalise and institutionalise a common approach to water quality management in South Africa.
- Support a consistent inter-departmental approach to how water quality is managed in the country.
- Support cooperative and integrated approaches to water quality management across sectors.
- Address operational aspects such as taking an integrated approach, broadening finance mechanisms and improving knowledge and information in the execution of the water quality management function.
- Provide a framework to realise improvements in water quality in key systems.
- Guide the development of an IWQM Strategy.

The WQM principles, Policy and Strategy are aligned in the following way:

The principles establish the fundamental norms, rules, or values that represent what is desirable to the country in terms of WQM. Principles form the foundation on which the policy is developed.

The Policy provides the overall vision and framework for how water quality should be managed in South Africa for at least, the next two decades.

The Strategy describes the prioritised strategic actions that need to take place over a five year horizon to realise the WQM envisaged by the policy, together with the enabling environment.

The implementation plan describes roles, responsibilities, timeframes and resource requirements to achieve the strategic actions.

The roll-out of the implementation plan involves monitoring and reporting on implementation performance and the effect the Policy and Strategy implementation has had on water resources.

1. The 15 policy principles developed in the initial phase were structured around the four areas of governance, economic and finance, operational, and data and information. Several of the policy principles were new in respect of their application to WQM, namely those that are underlined in the following list:
  - Governance

- Principle 1: Government-wide water quality management
- Principle 2: Subsidiarity and accountability
- Principle 3: Transboundary water quality management
- Principle 4: Partnerships
- Principle 5: Administrative fairness and implementability
- Principle 6: Administrative penalties (administered by DWS, not through the justice system)
- Economic and finance
  - Principle 7: Water quality is a developmental issue
  - Principle 8: Broadened funding principles
  - Principle 9: Polluter pays
- Operational
  - Principle 10: An integrated and adaptive approach
  - Principle 11: Hierarchies of water use and pollution management decision-making
  - Principle 12: Green/ecological infrastructure restoration and rehabilitation
  - Principle 13: Risk-based approach
- Data and information
  - Principle 14: Collection and protection of data
  - Principle 15: Publicly available information

The Policy is divided into four chapters, each of which describes the problem/challenge that needs to be resolved through the policy; the response to mitigate the challenge; and the principles to be adopted in responding to the challenge. The four chapters are:

- Chapter A: Inclusive WQM for South Africa
- Chapter B: Integrated, adaptive water quality regulation and management
- Chapter C: Financing IWQM
- Chapter D: Building the knowledge and capacity base

**Chapter A: Inclusive WQM for South Africa** deals with the need to see/understand the impact of water quality on the socio-economic and ecological development in the country; the need for an intra- and inter-departmental response to the WQM challenges in the country; some of the key policy aspects that must be addressed in achieving such an approach; and the need to build partnerships between government departments, civil society and the private sector in order to be able to successfully address the challenges. It addresses principles 1, 2, 4 and 7.

**Chapter 2: Integrated, adaptive water quality regulation and management** spells out the nature of an integrated approach to adaptive WQM and key policy framings of the integrated approach to regulation and adaptive management of water quality, including integrated, adaptive catchment planning, following a risk-based approach; and applying a hierarchy approach to decision-making. It addresses principles 3, 4, 5, 10, 11, 12 and 13.

**Chapter 3: Financing IWQM** examines the financial underpinnings of IWQM, looking at tools for financing the required actions, as well as the role of the private sector in this regard. It addresses principles 4, 6, 8 and 9.

**Chapter 4: Building the knowledge and capacity base** describes the policy with regard to the knowledge, human resource capacity and information base requirements to be able to implement the policy approaches. It addressed principles 4, 14 and 15.

It is tempting to believe that it is possible to follow a straight line from setting to achieving the desired objective, but in the real world this is never straightforward and the context is uncertain. Adaptive management therefore becomes a critical part of the process, necessitating ongoing monitoring and evaluation, and the periodic revision of the strategy and implementation plans.

Global good practice has shifted away from setting strategic plans with objectives to be set in a linear way. Global best practice in the private sector places less emphasis on sticking to a strategic plan than on building a rich and engaging corporate purpose; focuses less on formal structural design and more on effective management processes; is less concerned with controlling employees' behaviour than with developing their capabilities and broadening their perspective; and moves beyond the

doctrine of strategy, structure and systems to a more organic model built on the development of purpose, process and people.

The challenge is to ensure that the IWQM strategy also builds the capability of people and institutions to manage in an adaptive and proactive manner that responds in a constructive way to the changing environment.

The strategic intent of the Policy and Strategy:

- Is aligned with the strategic objectives of the policy, while being consistent with broader water and development strategies (National Development Plan, NWRS2)
- Is focused on a short term timeframe, while building a platform for future strategies in line with the policy and visions for water quality management
- Prioritises a limited number of critical concerns, while ensuring that other issues are addressed through ongoing management or monitoring for future prioritisation
- Is relevant at national, catchment and local scales, while ensuring horizontal alignment across sectors and institutions at each scale
- Guides the actions/activities to be described in the implementation plans on a short-term basis
- Allows for adaptive response to changing circumstances and achievements based on effective ongoing monitoring and evaluation, during its timeframe.

The vision for WQM in South Africa is that government, in partnership with the private sector and civil society secure good water quality for all, forever.

The mission is to:

- Support a consistent interdepartmental approach to how water quality is managed in the country
- Support cooperation and integrated approaches to WQM across sectors, including civil society
- Adopt an adaptive management approach in which co-creation and co-learning by key players is entrenched
- Realise improvements in water quality in key systems
- Start to build capacity for longer-term improvement in water quality.

The goals of the WQM Policy and Strategy are:

Goal 1: Improved alignment of Policy, Strategy and legislation

Goal 2: Improved governance

Goal 3: Improved, efficient and effective WQM

Goal 4: Innovative finance

Goal 5: Improved knowledge and information management.

The goals are designed to address various strategic issues:

Goal 1: Improved alignment of Policy, Strategy and legislation

- Strategic issue 1: Harmonise policies and strategies to enable improved integrated WQM
- Strategic issue 2: Legislative review and amendments to enable integrated WQM

Goal 2: Improved governance

- Strategic issue 3: Improve integrated WQM institutional structuring
- Strategic issue 4: Formalise governance frameworks to support non-governmental engagements

Goal 3: Improved, efficient and effective WQM

- Strategic issue 5: Improve coordinated integrated planning
- Strategic issue 6: Strengthen integrated WQM regulation, compliance and enforcement
- Strategic issue 7: Applications of systems-based adaptive management approaches

Goal 4: Innovative finance

- Strategic issue 8: Improve and sustain fiscal support for integrated WQM
- Strategic issue 9: Develop pricing and incentive systems that support integrated WQM

Goal 5: Improved knowledge and information management.

- Strategic issue 10: Strengthen monitoring and information management
- Strategic issue 11: Build water quality and WQM capacity through education, training and communication

Whilst there is a need to change our approach to WQM, it must be recognised that there is a well-conceived framework for WQM that needs to continue being implemented.

Implementation would involve:

- **Fixing priority issues:** This will provide the opportunity to realise success in addressing key issues and will embark on looking at rehabilitation or remediation in critical catchments. This will also entail looking at priority issues that can support the building of capacity and the on-going application of existing instruments.
- **Building capacity:** Whilst it is understood that the capacity that the water sector requires will not be in place within the short term, in terms of skills, integrated information and systems, this is an important issue that needs to be driven immediately and continued over time in order to build adaptive management capacity. This also includes the development of cooperative partnerships across government, private sector and civil society.
- **Maintaining and sustaining the system:** The on-going processes that the DWS has in place will continue to be utilised to manage water quality across the country. These instruments and systems may require strengthening over time. This could involve exploring ways in which to improve and simplify some of these instruments. This would include a drive to look at where instruments and systems can be integrated between departments in order to improve inter-departmental approaches.

## Discussion

Nelson Odume (Rhodes University Institute for Water Research) commented that the key elements of the principles are not clear. The historical problem has been that WQM has been done in silos by the various sectors. The philosophy of WQM needs to change: systemic connectivity and regionality should be the principles that inform WQM. The path of integration could be taken if WQM was considered as a socioeconomic problem. He asked what the role of the 'man in the street' was in relation to integrated WQM and how his values were taken into account. He asked whether the principle of subsidiarity relates only to government or to society at large. The implementation of principles involves trade-offs, and the way in which values are balanced is a critical issue.

Andrew Lucas (DWS: Regulation) asked whether it would be possible to require institutions to put a certain percentage of their capital aside for green operations and maintenance. The polluter pays principle applies, but offenders are innocent until proved guilty; Mr Lucas suggested moving to the position of considering offenders guilty until they prove themselves innocent and proposed adapting strategies to take that into account.

Dr Nikite Muller (Amatola Water) commented that water quality had been seen as the end goal instead of as an integrated part of the whole water cycle. Thinking in that way would produce more cross-cutting responses. Water boards are at the receiving end of water quality, and there is a missing gap in the water cycle. Regulatory measures and user-oriented responses should be integrated in approaches to WQM. DWS should not shy away from an approach that will be difficult.

## WORKSHOP 1: STRATEGIC ACTIONS: REVIEW AND PRIORITISATION

Workshop participants worked together in teams of four to five people. The objectives were to:

- Review of the strategic action list and comment and add anything that they felt was missing in the table.
- List ten critical actions that need to be addressed in the province to address water quality and its management
- List three critical actions that need to be addressed nationally to address water quality and its management

Teams recorded their responses in the Strategic Actions Table (see Appendix 3).

## WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION

Workshop participants worked together in the same teams as for Workshop 1. The objectives were to answer the following questions for the ten provincial actions that they had prioritised in Workshop 1:

- What are the activities required to achieve these in the province?
- Who are the key actors and what roles do they play?
- How do we ensure implementation?

Teams recorded their responses in on flipcharts, which were typed up as Appendix 4.

## FEEDBACK DISCUSSION

Teams had the opportunity to provide feedback to the workshop (Appendix 3 and 4).

## WAY FORWARD

This was the first of the provincial roadshow workshops. A workshop was scheduled for each province according to the following schedule:


Eastern Cape	East London	12 October 2016
Free State	Bloemfontein	14 October 2016
Northern Cape	Kimberley	18 October 2016
North West	Rustenburg	21st October 2016
KwaZulu-Natal	Durban	25 October 2016
Gauteng	Pretoria	28 October 2016
Mpumalanga	Nelspruit	1st November 2016
Limpopo	Polokwane	4 November 2016
Western Cape	Cape Town	9 November 2016

The next steps in the process were as follows:


- Gazette Edition 1 of WQM Policy for comment and further revise the Policy to produce Edition 2 (final edition) based on further inputs from wider stakeholder groups (and the public) and the outcomes of the IWQM Strategy development process.
- Develop IWQM Strategy Edition 2 and Implementation Priorities based on inputs from provincial workshops, inputs from project committees and inputs from focused discussions with key stakeholder groups
- National Inter-Departmental Workshop, scheduled for November or December 2016
- National Symposium, scheduled for April 2017.

## CLOSURE

Mr Viljoen thanked Mr Lucas for hosting the workshop in the province. Mr Viljoen was impressed with the contributions and attendance, and thanked everyone for making the time available to attend. The Policy and Strategy would be finalised by the end of the financial year, and the priorities indicated by the provinces would be written into the implementation plan. Mr Lucas thanked the DWS National Office for their support.

  
 DWS Project Manager  
 Pieter Viljoen  
 Scientist Manager: Water Quality Planning

Date: 29/01/2017

  
 PSP Team Leader  
 Derek Weston  
 Associate Director: Pegasus

Date: 17/01/2017

**APPENDIX 1: LIST OF ACRONYMS**

CMA	Catchment management authority
COGTA	Department of Cooperative Governance and Traditional Affairs
CSIR	Council for Scientific and Industrial Research
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DEDEA	Eastern Cape Department of Economic Development, Environmental Affairs
DMR	Department of Mineral Resources
DoE	Department of Energy
DoH	Department of Health
DPSA	Department of Public Service and Administration
DRDLR	Department of Rural Development and Land Reform
DWS	Department of Water and Sanitation
IDP	Integrated Development Plan
IWQM	Integrated water quality management
NEMA	National Environmental Management Act
NGO	Non-governmental organisation
NPA	National Prosecuting Authority
NWA	National Water Act
NWRS	National Water Resource Strategy
O&M	Operation and maintenance
PSP	Professional service providers
RQO	Resource quality objective
SALGA	South African Local Government Association
SDG	Sustainable Development Goal
SWOT	Strengths, weaknesses, opportunities, threats
UK	United Kingdom
UN	United Nations
WISA	Water Institute of Southern Africa
WQM	Water quality management
WRC	Water Research Commission
WSA	Water services authority
WULA	Water use licence applications
WWTW	Wastewater treatment works

**APPENDIX 2: COMMENTS FOR THE COMMENTS REGISTER**

<b>Comment from Eastern Cape roadshow</b>	<b>Comment made by</b>
Irrigation board pays an annual water resource management fee to cover the costs of DWS, including monitoring	Pierre Joubert (Gamtoos Irrigation Board)
A strategy is needed to determine all the levels at which intervention in municipalities is necessary.	Andrew Lucas (DWS: Regulation)
Intergovernmental relations need to be strengthened and to involve engagement.	Bongani Makehle (Joe Gqabi District Municipality)
Intergovernmental relations are not strong at regulatory level.	Bongani Makehle (Joe Gqabi District Municipality)
The principles of systemic connectivity and regionality should inform WQM. Integration would be fostered if WQM was considered as a socioeconomic problem. The role and values of the 'man in the street must be taken into account in relation to integrated WQM. The implementation of principles involves trade-offs, and the way in which values are balanced is a critical issue.	Nelson Odume (Rhodes University Institute for Water Research)
Institutions should be required to put a certain percentage of their capital aside for green operations and maintenance.	Andrew Lucas (DWS: Regulation)
With respect to the polluter pays principle, the position should be to consider offenders guilty until they prove themselves innocent.	Andrew Lucas (DWS: Regulation)
Water quality should not be seen as the end goal but as an integrated part of the water cycle. Thinking in that way would produce more cross-cutting responses. Water boards are at the receiving end of water quality, and there is a missing gap in the water cycle.	Dr Nikite Muller (Amatola Water)
A missing strategic objectives is policy monitoring, measuring and review of implementation and success of the actions	Frank Akamagwuna, Notiswa Libala, Pindiwe Ntloko (Rhodes University Institute for Water Research), Mervin Olivier (GIBB Engineering)



**APPENDIX 3: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 1: STRATEGIC ACTIONS: REVIEW AND PRIORITISATION**

T1: Unknown – perhaps Jim Gibson (MGSM), Landile Jack (DWS East London)

T2: Ntombi Tshialela (DWS: Proto-CMA), Thandile Ngcume (DWS Communication)

T3: Frank Akamagwana, Notiswa Libala, Pindiwe Ntloko (Rhodes University Institute for Water Research), Mervin Olivier (GIBB Engineering)

T4: Andrew Lucas (DWS: Regulation)

T5: Anathi Mgbozi, Ncumisa Mnotoza (DWS), Xolani Mtsolongo, Ntombi Feni, Nqabomzi Xotyeni (DWS: Proto-CMA)

T6: Mmabatho Mampane (DWS), Bolekwa Kama (DWS), Zola Dolomba (Chris Hani District Municipality), Theunis Schoeman, Deanne Karshagen (Buffalo City Metropolitan Municipality)

T7: Mfesane Nkwenkwezi, Noluvuyo Nanto (Chris Hani District Municipality), Simphiwe Simunca (DWS Mtata), Mzukisi Maneli (DWS Port Elizabeth), Bongani Matomela (OR Tambo District Municipality)

T8: Petrus du Preez (Agri Eastern Cape), Pierre Joubert (Gamtoos Irrigation Board), Mpfariseni Kennedy Ramulifho, Gcobisa Matakane (Chris Hani District Municipality), Yola Ketezwa (Kumkani FM)

T9: Wayne Selkirk (PCT), Dr Cherie Lynn Mack (EOH Coastal and Environmental Services), Maurice Bila, Dr Nikite Muller (Amatola Water), Phillip de Wet (DWS)

T10: Nelson Odume (Rhodes University Institute for Water Research), Sonwabile Menyelwa (DWS), Luyolo Ndenze (Buffalo City Metropolitan Municipality), Bongani Makehle, Ncumisa Dingilizwe (Joe Gqabi District Municipality)

Strategic Issues	Strategic Objectives	Strategic Actions	Add/Comment	Prioritise	
				Achieve Actions Short/long term	Priority H, M, L
<b>Strategic Issue 1:</b> Harmonization of Policies and	<b>SO 1 a:</b> Policies and Strategies impacting upon IWQM are	<b>SA1:</b> DWS to ensure that policy development and refinement within DWS addresses WQM	<b>T2:</b> Policies and strategies to be communicated to civil society as the users of the resource <b>T3:</b> Change the word 'harmonisation' to simple English <b>T6:</b> Agreed, but need to reflect current situation	<b>T1:</b> Long term <b>T6:</b> Long term <b>T7:</b> Long term <b>T8:</b> Medium	<b>T1:</b> High <b>T6:</b> High <b>T7:</b> High <b>T8:</b> Medium

Strategic Issues	Strategic Objectives	Strategic Actions	Add/Comment	Prioritise	
				Achieve Actions Short/long term	Priority H, M, L
Strategic to enable improved WQM	harmonized		<p>T7: Establishment of intergovernmental committee to harmonise policies and strategies</p> <p>T8: Don't lost concentration on any water quality in the catchment areas</p> <p>T9: This is a top-down approach. Need to make sure that bottom-up is included at the same: must make sure that you have the foundation secured</p> <p>T10: Implementation and application of WQM strategy at different levels</p>	term T10: Short term	T10:High
		SA2: Sector departments to harmonise policies and strategies to support IWQM	<p>T4: How will this be achieved and encouraged i.e. improved land management and over-grazing causing erosion and sediment</p> <p>T7: Cultural change on water and sanitation. Start with individual responsibility at households</p> <p>T10: Strategic objectives – too much focus on DWS, leaving out other key government institutions</p>	T1: Long term T7: Long term T10: Short term	T1: High T7: High T10: High
		SA3: DWS to finalise and implement non-point source pollution strategy	T9: Should consider a water lifecycle approach, and nor simply water quality as an end point. One person's effluent is another person's drinking water	T1: Short term	T1: High
STRATEGIC ISSUE 2: Legislative review and amendments to enable integrated WQM	SO2a: NWA/WSA effectively support integrated WQM	SA4: DWS to amend NWA and WSA to provide effective support to integrated WQM	<p>T2: To see the lessons learnt when NEMA was promulgated</p> <p>T4: Happy</p> <p>T6: High</p>	T1: Long term T6: Long term	T1: High T6: High
		SA5: DWS to develop guidelines and protocols on the effective use of instruments	<p>T1: Educate the relevant people</p> <p>T5: Amendment by Head Office by liaising with CMAs and regional offices. Furthermore include WSAs</p> <p>T9: Site-specific relevance of measured water quality parameters – driven by local conditions and users: frequency of sampling as well as spatial positioning of</p>	T5: Short term	T5: High

Strategic Issues	Strategic Objectives	Strategic Actions	Add/Comment	Prioritise	
				Achieve Actions Short/long term	Priority H, M, L
			monitoring points		
	SO2b: Other legislation effectively supports integrated WQM	SA6: National Treasury and DWS to promulgate a Money Bill for the Waste Discharge Levy	T1: Verify and validate all waste discharges T2: There should be a link between the DoH, DoE, DAFF to avoid conflict T5: Head Office – policy amendment CMA and regional office – policy implementation WSA – compliance and enforcement of NWA and bylaws T6: To include Department of Human Settlements	T1: Long term T5: Short term T6: Long term	T1: High T5: High T6: High
		SA7: DWS, DAFF, DMR and DEA to identify and amend relevant legislation to strengthen WQM	T1: Incorporate all interested and affected parties and amend all legislation T9: There is no point in having legislation if you're not going to enforce it	T1: Long term	T1: High
STRATEGIC ISSUE 3: Improved WQM institutional structuring	SO3a: DWS departmental structures support integrated WQM	SA8: DWS to reconfigure the departmental WQM function as needed to ensure efficiency and effectiveness	T2: Support to be clearly defined and to be linked with policies and to cover all structures involved T6: Agree T7: To prioritise WQM in terms of financial support and stakeholder involvement T9: If you're going to implement fines, must make sure the fine is relative to the offence/environmental damage caused (risk-based assessment)	T1: Long term T7: Long term T8: Long term	T1: High T7: Medium to high T8: Medium
		SA9: Develop the institutional protocols to enable DWS intervention in municipalities regarding discharges from failing	T3: Happy T4: Priority T7: Align to intergovernmental institutions, involve National Treasury. Let's be proactive in terms of addressing some of the failures. DWS must influence the community	T1: Long term T4: Regional priority T7: Long term	T1: Medium T4: High T7: High

Strategic Issues	Strategic Objectives	Strategic Actions	Add/Comment	Prioritise	
				Achieve Actions Short/long term	Priority H, M, L
			T9: Developing partnerships is great, but relationships need to be clearly defined, and DWS role and responsibility should not be transferred to partners		
	SO3b: Inter-sector departmental structures established to support integrated WQM	SA10: Establish intergovernmental WQM structures at trans-boundary basin, national and joint action supported by regular reporting (link to activity on MoAs)	T2: Inter-sector to be defined (e.g. refer to them as stakeholders) T6: Agreed. Quality agreement in order to protect source water T7: Establishment of CMAs. Establish catchment structures at catchment level, provincial level, align with transboundary level, especially Lesotho T10: Policy-centric governance institutions and structuring; multiple interactive centres of governance	T10: Long term	T10: High
		SA11: Government departments to develop sector WQM plans and report annually on progress	T6: Department of Local Government/WSA to be included. WQM to be developed T7: Align over business plans and protocols. Build capacity with other sister departments at provincial level T9: We need water sector leadership; experience rather than training. There has been a loss of experienced water quality expertise; need skills transfer, mentorships leader to retention strategies	T7: Long term T9 Medium to long term	T4: Medium/low T7: High T9: Medium priority
STRATEGIC ISSUE 4: Formalise governance frameworks to support non-governmental engagements	SO4a: Partnerships/stewardships established and maintained	SA12: DWS to develop a partnership framework that is fair and equitable	T2: Partnerships to be made with private sector and other parties interested to be clearly defined; to include universities T3: English is jargon for number 4 (issue) T4: Partnerships require contributions to be made. Partners only participate if the benefit is seem T6: Agree. Identify correct roleplayers for valid input and ability to implement strategies T7: Within the water quality environment, we must build	T7: Long term T8: Medium term	T7: High T8: High

Strategic Issues	Strategic Objectives	Strategic Actions	Add/Comment	Prioritise	
				Achieve Actions Short/long term	Priority H, M, L
			the social impact with the community T8: What happens to water quality when government changes? It's good to have a strategy but what will happen now and long term		
		<b>SA13:</b> DWS to develop and foster strategic sector partnerships	T7: Utilise the existing procedures T9: Fines should be ringfenced for remedial/rehabilitation actions: WHAT IS GOING TO HAPPEN TO THE MONEY?	T1: Short term T9 Medium to long term	T1: Medium T9: Medium
	<b>SO4b:</b> Governance framework for active citizenry formalized	<b>SA14:</b> DWS with DEA and CMAs to develop an engagement framework that enables more active participation of civil society at transboundary, national and catchment levels	T2: All citizenships have responsibility to report any water issues T4: DWS does participate in COGTA's war rooms set up for each ward, but there are too many, therefore insufficient capacity. Support the use of social media as this will not require travelling to meetings T7: Active citizen mobilisation and social compact T10: Catchment management forums; integration of water services and resources (local government and catchment)	T1: Long term T4: Short term T7: Long term T10: Short term	T1: High T4: Medium T7: High T10: High
		<b>SA15:</b> DWS, DEA and CMAs to support and drive functional platforms for the engagement of civil society nationally and within catchments	T7: Through workshops, bilateral meetings, establishment of water management committee at local level	T1: Long term T7: Long term	T1: High T7: High
<b>STRATEGIC ISSUE 5:</b> Improved coordination in integrated planning	<b>SO5a:</b> Integrated sectoral planning approach is adopted at transboundary and national level	<b>SA 16:</b> DWS to lead the development of an IWQM plan for national priority catchments, ensuring consideration of transboundary WQ concerns	T3: Happy T6: Agreed	T1: Long term	T1: High

Strategic Issues	Strategic Objectives	Strategic Actions	Add/Comment	Prioritise	
				Achieve Actions Short/long term	Priority H, M, L
		<b>SA 17:</b> DWS, with NT, SALGA and COGTA to develop a strategic action plan for the rehabilitation and upgrade of prioritized WWTWs	T4: Priority for Eastern Cape	T1: Short term T4: Provincial priority	T1: High T4: High
		<b>SA18:</b> DWS to work with DMR and DEA to develop a strategic action plan for the implementation of the mine-water management policy	T4: National priority	T1: Long term T4: Long term	T1: High T4: High
		<b>SA 19:</b> DWS/DAFF/DMR/DEA/DRDL R/COGTA to development strategic action plan to reduce non-point source pollution	T4: Priority for Eastern Cape		
		<b>SA 20:</b> DWS, DEA, SALGA and COGTA to develop a protocol for the management of industrial discharge within the municipal environment			
	<b>SO5b:</b> Integrated sectoral planning approach adopted in catchment/regional plans	<b>SA 21:</b> CMAs to develop an IWQM plan for each water management area as part of the CMS	T2: The department to prioritise catchment management strategies and local municipalities' SDF to be clearly defined and communicated to the public T4: Yes, must start here T6: Agreed, need to take to national plan, but implemented to regional/catchment characteristic T10: More emphasis on CMAs and local government		
		<b>SA 22:</b> DWS, DEA and DMR to integrate IWQM and water resource planning with			

Strategic Issues	Strategic Objectives	Strategic Actions	Add/Comment	Prioritise	
				Achieve Actions Short/long term	Priority H, M, L
		Regional Mining Plans in priority areas			
		<b>SA 23:</b> DWS and COGTA to ensure that WSDPs, IDPs and SDFs reflect WQM priorities and management responses	T4: Often these planning reports are done for malicious compliance and do not report on it		
<b>STRATEGIC ISSUE 6:</b> Strengthen IWQM Regulation, Compliance and Enforcement	SO6a: Licencing processes streamlined	<b>SA 24:</b> DWS to address the backlog of WUL applications urgently and to meet stipulated timeframes for new licence applications	T1: Use electronic system that tracks when application is submitted and who received it and backlog time frames to avoid time allocation T2: All these departments to ensure integration. All units to have inputs T3: Happy T4: Enforcement of licence conditions is neglected T6: <u>AGREED</u> T10: Integration of water quality and quantity as one unifies licensing process	T6: Short term T10: Short to long term	T6: High T10: High
		<b>SA 25:</b> DWS, DEA to develop risk-based protocols for determining water use authorization	T6: Roleplayers: DWS, WSA, agriculture, industries, mining, DEA. Implementation: WSA to request; DWS to issue timeously T10: Integration of DWS perspectives with those of other government departments e.g. DEA, Agriculture etc.	T6: Short term T8: Short term T10: Long term	T6: High T8: High T10: Medium
		<b>SA 26:</b> DWS/CMAs to develop protocols for CMA engagement in IWUL applications and approval processes		T1: Long term	T1: High

Strategic Issues	Strategic Objectives	Strategic Actions	Add/Comment	Prioritise	
				Achieve Actions Short/long term	Priority H, M, L
		<b>SA 27:</b> DWS, DEA, DAFF and DMR to develop and implement a protocol for integrated licensing processes	T4: Yes, needed		
		<b>SA 28:</b> DWS, DEA, DAFF and DMR to develop information management systems to support the integrated licensing approach	T4: Yes, information fragmented and lost in hard copy T5: Key role players are all sector departments to provide technical inputs and/or issue licences	T1: Long term	T1: High T5: High
	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	<b>SA 29:</b> DWS, DEA to develop improved regulatory approaches to manage WQ pollution from land-based activities	T1: Enforcement T2: Compliance monitoring and enforcement to sources imposing more risk rather than polluting sector T4: Yes T6: Agreed, but consider funding from national level or addressing interdepartmental funding using municipal services including the role of audits and ?	T4: Provincial priority T6: Short term T8: Long term T9: Short term	T4: High T6: High T8: High T9: High
		<b>SA 30:</b> DWS, DEA, CMAs to develop a targeted approach for the enforcement of regulation	T4: Yes, but in Eastern Cape the WSAs, sewage pollution and WWTW are worst	T9: Short term	T9: High
		<b>SA 31:</b> DWS, DEA to assess gaps in regulatory frameworks and instruments and develop revised approaches and instruments as necessary		T9: Short term	T9: High
		<b>SA 32:</b> DWS, DEA, CMAs to develop systems for joint CME		T9: Short term	T9: High



Strategic Issues	Strategic Objectives	Strategic Actions	Add/Comment	Prioritise	
				Achieve Actions Short/long term	Priority H, M, L
<b>STRATEGIC ISSUE 7:</b> Application of Systems-based Adaptive Management Approaches	SO7a: Adaptive systems-based management is applied at catchment level	SA 33: CMAs to develop localised programmatic monitoring and reporting of actions and outcomes	T2: Adaptive system to be emphasised or a catchment management strategy, operational plans and work plans T3: We are not sure what issue 7 is about; change the language T6: Agreed, already have cash constraints. Implementing something new. Shortage of funds. Will never transpire		
		SA 34: CMAs to lead process with other relevant government departments and agencies, and stakeholders, to review, identify and address priority WQ challenges at regular intervals	T10: Adaptive systemic relationality approach. Catchment as complex social-ecological systems	T8: Medium term T10: Long term	T8: Medium T10: High
		SA 35: DWS with DEA and CMAs to develop protocols for systems-based adaptive management for IWQM.			
<b>STRATEGIC ISSUE 8:</b> Fiscal support for integrated WQM	SO8a: WQM interventions are financially supported by the fiscus	SA 36: WRC to support research into the socio-economic-environmental and management costs of poor WQ	T2: There should be incentives to the municipalities/sectors with a ringfenced revenue out of water and sanitation, and keep a separate account T3: Happy, but we feel that we know most of the issues and how to resolve them. We would spend 20% of the budget on research and 80% on fixing the problem. Inadequate resources for day-to-day operational assessment and administrative processing e.g. licence application processes, Reserve determination, lack of head office assessments (speed of review) T4: Yes	T4: Long term	T4: Medium

Strategic Issues	Strategic Objectives	Strategic Actions	Add/Comment	Prioritise	
				Achieve Actions Short/long term	Priority H, M, L
		<b>SA 37:</b> DWS to develop an investment framework including innovative mechanisms to mobilise funding for sustained support to IWQM		T8: Long term	T8: High
		<b>SA 38:</b> DWS, with COGTA, SALGA, to review municipal conditional grants	T4: Yes, grants to include O&M, which can be used on existing infrastructure	T4: National priority	T4: High
		<b>SA 39:</b> DWS to develop and implement a protocol for extending the financial provisioning clause to all industries that are deemed “high-risk” polluters.			
<b>STRATEGIC ISSUE 9:</b> Develop pricing and incentives that support integrated WQM	<b>SO9a:</b> The Waste Discharge Charge System is implemented	<b>SA 40:</b> DWS, with CMAs, to implement the WDCS in priority catchments	T3: Happy T4: In Eastern Cape it will impact mainly on WSAs (cash-strapped municipalities) T6: Agreed		
		<b>SA 41:</b> DWS, with CMAs, to develop an action plan to support the phased implementation of the WDCS across the country	T2: The Minister of Finance needs to comment and to be linked to the municipal bylaws T5: DWS, CMA, WSA	T5: Long term	T5: High
	<b>SO9b:</b> Mechanisms for incentivising good practice developed	<b>SA 42:</b> DWS/DEA/WRC to explore innovative financing mechanisms for incentivising good IWQM practice	T2: There should be more incentives to municipalities and ringfenced budget coming from water and sanitation on top of BD and GD T4: Yes T10: Not just good practice of today but imaginative futuristic good practice; innovation and technology	T10: Long term	T10: Medium

Strategic Issues	Strategic Objectives	Strategic Actions	Add/Comment	Prioritise	
				Achieve Actions Short/long term	Priority H, M, L
		<b>SA 43:</b> DWS and NT to determine financial incentives for water-reuse (AMD, other)	T4: Yes, currently only the user benefits		
		<b>SA 44:</b> DWS/DEA to develop the legal and institutional mechanisms for introducing administrative penalties for environmental non-compliance including water pollution.	T4: Yes, this is a priority T10: Citizen-directed mechanisms for good practice. These measures can take different dimensions	T4: Short term T10: Long term	T4: High T10: High
<b>STRATEGIC ISSUE 10:</b> Strengthen Monitoring and Information Management	<b>SO10a:</b> An integrated and functioning WQ monitoring network	<b>SA 45:</b> DWS/CMAs to strengthen national and catchment WQ monitoring networks through spatial expansion and identification of priority constituents for catchment-specific monitoring	T2: We need user friendly systems T3: Happy T6: Agreed, allows for better river profiling T10: Water quality predictive capacity is improving. Scenario-based prediction of future water quality and the associated social, economic and ecological consequences	T6: Short to medium term T9: Medium term (approximately 5 years)	T6: High T9: High
	<b>SO10b:</b> Information systems that are current and accessible to support adaptive WQM	<b>SA 46:</b> DWS, with the WRC and CMAs, to lead the development of a programme to create and support citizen-based monitoring programmes	T6: No, too many independent results floating around. Not standardised methods and therefore results invalid, resulting in chaos T10: Streamlined information system for rapid response		
		<b>SA 47:</b> DWS/DEA/CMAs to ensure the harmonisation of data and information systems pertaining to WQ	T6: Yes		
		<b>SA 48:</b> DWS, CMAs, DEA, DAFF, DMR to develop systems to enable data and information access by stakeholders/public	T4: Yes, social media must be monitored and used. DWS does participate in COGTA's war rooms set up for each ward, but there are too many, therefore insufficient capacity. Support the use of social media as this will not require travelling to meetings	T4: Short term	T4: Medium

Strategic Issues	Strategic Objectives	Strategic Actions	Add/Comment	Prioritise	
				Achieve Actions Short/long term	Priority H, M, L
			T6: Yes		
	<b>SO10c:</b> Routine assessments inform adaptive WQM	<b>SA 49:</b> DWS/DEA/CMAs to develop protocols and systems to ensure M&E and new information inform adaptive management decisions for IWQM	<b>T5: CMA and regions</b> T6: Yes, continuous improvement	<b>T5: Short term</b>	<b>T5: High</b>
<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	<b>SA 50:</b> DWS/WRC to develop and implement a capacity building programme for officials in DWS, CMA and other sector departments in systems-based, adaptive IWQM	<b>T4: Yes, but also a retention strategy. Train and capacity build DWS and WSA staff. Retention strategy for DWS staff (DWS, universities, DPSA)</b> T10: Promoting the establishment of centre of excellence for water quality education		
		<b>SA 51:</b> DWS/CMAs to expand capacity-building initiatives to civil society and private sector	<b>T3: Happy</b> T6: Agreed, must inform and capacitate role players for effective implementation of the policy <b>T8: You cannot</b> T10: Creating demand-driven training courses at all levels across the sector business	<b>T8: Short to medium term</b> <b>T9: Short term</b> T10: Short term	<b>T8: High</b> <b>T9: High</b> T10: High
		<b>SA 52:</b> DWS to develop regulations to ensure the professionalization of key water services functions	<b>T4: Yes, priority. Need to get passion back into sector</b>	<b>T4: Short term</b>	<b>T4: High</b>
		<b>SA 53:</b> DWS/private sector to providing bursaries/learnerships pertaining to WQM at tertiary			

Strategic Issues	Strategic Objectives	Strategic Actions	Add/Comment	Prioritise	
				Achieve Actions Short/long term	Priority H, M, L
		institutions			
	SO11b: WQM decisions are underpinned by best practice, research and innovation	SA 54: DWS, with the WRC, to investigate the options provided by recent innovative developments to improve water quality	T2: WRC, graduate trainees, internships and other institutions to be supported T6: Agree, defendable, effective, realistic		
		SA 55: WRC to lead the sector in innovation, research and development for IWQM			
	SO11c: A well informed and actively engaged South Africa	SA 56: DWS to report annually on the state of WQ in the country	T2: Strengthening of communication through media statements, articles, interviews/talk shows, public engagement/awareness campaigns and include issues of WQM T6: Agree T10: A value-based bottom-up citizens initiative	T10: Long term	T10: High
		SA 57: DWS/WRC to develop online tools for easy access to WQ and WQM related information	T4: Yes T6: All information needs to be integrated		
		SA 58: DWS/DEA/DAFF/DMR/CMAs to develop and maintain multi-sector stakeholder platforms for sharing information	T4: Yes T6: Agree		

**MISSING**

T3: Policy monitoring, measuring and review of implementation and success of the actions



## APPENDIX 4: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION

T2: Ntombi Tshialela (DWS: Proto-CMA), Thandile Ngcume (DWS Communication)

	Strategic objective	Activities	Key actors
1	SO 1 a: Policies and Strategies impacting upon IWQM are harmonized	<ol style="list-style-type: none"> <li>1. Head office to take the lead</li> <li>2. Regional offices to be informed and input</li> <li>3. Communicate through media statements, interviews (one on one), radio talk shows</li> </ol>	<ol style="list-style-type: none"> <li>1. DWS Head Office (Technical, Legal)</li> <li>2. DWS Regional Offices (line management, local municipalities, communities)</li> <li>3. IAP (universities, consultants and specialists)</li> </ol> <p><u>Implementation</u></p> <ol style="list-style-type: none"> <li>1. Regional offices</li> <li>2. CMAs</li> <li>3. Catchment forums</li> </ol>
2	SO4a: Partnerships/stewardships established and maintained	<p>identify the relevant partners</p> <p>engagement with identified stakeholders regarding their activities involving WQM</p> <p>Stipulation of roles and responsibilities on WQM</p>	<p>DWS and Water and Sanitation</p> <p>Local municipalities</p> <p>Industries involved in water sector (e.g. breweries, textiles, motor industry etc.</p> <p><u>Implementation</u></p> <p>Terms of reference</p> <p>Contracts, service level agreements</p> <p>Memoranda of understanding</p>
3	SO6b: Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	<p>Good policies to be in place and implemented with no loopholes</p> <p>Training of staff</p> <p>Clearly defined SDF within the local municipality</p> <p>Good water services development plans and their implementation</p> <p>A good policy on solid waste</p>	<p>DWS, DEA local municipalities</p> <p><u>Implementation</u></p> <p>Trained enforcement officials</p> <p>local government , industry and individual support</p> <p>Good legal support</p>
4	SO8a: WQM interventions are financially supported by the fiscus	<p>Budget</p> <p>Identification of risk areas</p> <p>Implementation plan and schedule on mitigation of the risks</p>	<p>DWS Manco: Approved budget to water and sanitation</p> <p>WSP, WSAs: Water services development plans, IDP, O&amp;M budget and ringfenced budget</p> <p>COGTA: Approval of funding grants</p>

T3: Frank Akamagwana, Notiswa Libala, Pindiwe Ntloko (Rhodes University Institute for Water Research), Mervin Olivier (GIBB Engineering)

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
1	SO6b: Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	Involve communities and create awareness campaigns	DWS, DEA, CMAs, agriculture, industries, local municipalities, communities
2	SO6a: Licencing processes streamlined	More people are needed to process licensing applications	DWS, DEA, DAFF
3	SO8a: WQM interventions	There is a need to apply to Treasury for additional funds for research	National Treasury, research institutions, private sector
4	SO4b: Governance framework for active citizenry formalized	Develop active participation of communities at national and catchment levels	DWS, DEA, CMAs, communities, agriculture, universities, municipalities
5	SO9b: Mechanisms for incentivising good practice developed	reduce charges, if they have met the target of pollution reduction	DWS, National Treasury, DEA



## T4: Andrew Lucas (DWS: Regulation)

Head office priorities

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
2	SO3a: DWS departmental structures support integrated WQM	Need to have systems where WSA is forced to partner with capacitated PSP to run the WWTW and train/capacitate staff and only withdraws when staff are competent.	COGTA, (SALGA), DWS, PSPs, WISA
2	SA 38: DWS, with COGTA, SALGA, to review municipal conditional grants	DWS grants, MWIG, RBIG must have an O&M component that can be directed to be used on other infrastructure in same way as co-funding principle	DWS, Treasury, COGTA
3	SO5a: Integrated sectoral planning approach is adopted at transboundary and national level	Delayed O&M now requires major repair and a special intervention is required as it is beyond WSAs to rectify	DWS, COGTA, Treasury
4	SO8a: WQM interventions are financially supported by the fiscus	Studies to show cost/benefit of improving WQM. See it as an 'investment' in our water future	DWS, WISA, CSIR, WRC, Treasury
5	SO11a: Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	Train and capacity build DWS and WSA staff. Retention strategy for DWS staff OSD recognition for sector staff	DWS, universities, DPSA
5	SA 48: DWS, CMAs, DEA, DAFF, DMR to develop systems to enable data and information access by stakeholders/public		

Provincial priorities

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
1	SO5a: Integrated sectoral planning approach is adopted at transboundary and national level	Delayed O&M now requires major repair and a special intervention is required as it is beyond WSAs to rectify	DWS, COGTA, Treasury
2	SA9: Develop the institutional protocols to enable DWS intervention in municipalities regarding discharges from failing		
3	SO6b: Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	Improve capacity and support of regulatory role Allocate resources to regulation	DWS, DEA
4	SA 44: DWS/DEA to develop the legal and institutional mechanisms for introducing administrative penalties for environmental non-compliance including water pollution.	Concept of spot fines for non-compliance and pollution	DWS, Treasury, DEDEA, NPA

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
5	SO4b: Governance framework for active citizenry formalized	DWS must appoint social media specialists and set aside resources to address issues raised in this matter	DWS, COGTA, WSAs

T5: Anathi Mgbozi, Ncumisa Mнотоza (DWS), Xolani Mtsolongo, Ntombi Feni, Nqabomzi Xotyeni (DWS: Proto-CMA)

Head office priorities

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
1	SO2b: Other legislation effectively supports integrated WQM	Integration with other legislation e.g. MPRDA, CARA, NEMA, NEMWA, NEMBA	
2	SO5b: Integrated sectoral planning approach adopted in catchment/regional plans	Integrated sectoral planning	
3	SO11a: Sustained capacity for Government/CMA/sector to effectively manage and support WQM through improved education and training	Capacity building both internally for staff and for external stakeholders	

Provincial priorities

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
1	SO2a: NWA/WSA effectively support integrated WQM	NWA amendment by Head Office. Liaise with CMAs and regional offices	
2	SO6a: Licencing processes streamlined	Integrated licensing approach	
3	SO10c: Routine assessments inform adaptive WQM	Protocols and systems to ensure M&E in intergovernmental cooperation	
4	SO9a: The Waste Discharge Charge System is implemented	Action plans to support implementation	
5	SO11a: Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	Extend to public Capacity building programmes and within other sector departments	

T6: Mmabatho Mampane (DWS), Bolekwa Kama (DWS), Zola Dolomba (Chris Hani District Municipality), Theunis Schoeman, Deanne Karshagen (Buffalo City Metropolitan Municipality)

Provincial priorities

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
1	SO6a: Licencing processes streamlined	Licence application by user Response by DWES within acceptable period of time	
2	SO6b: Targeted/strengthened compliance monitoring and enforcement of key polluting sectors		Water users Regulatory authority (DWS, DEA)
3	SO10a: An integrated and functioning WQ monitoring network	Policies to be in place Budget availability Capacity availability (skills and personnel)	
4	SO 1 a: Policies and Strategies impacting upon IWQM are harmonized		
5	SO2a: NWA/WSA effectively support integrated WQM		

T7: Mfesane Nkwenkwezi, Noluvuyo Nanto (Chris Hani District Municipality), Simphiwe Simunca (DWS Mtata), Mzukisi Maneli (DWS Port Elizabeth), Bongani Matomela (OR Tambo District Municipality)

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
1	SO 1 a: Policies and Strategies impacting upon IWQM are harmonized	Government to call water sector indaba through the DWS Establishment of the water committee in order to champion WQM issues Develop a programme to introduce cultural change Introduce and monitor the catchment cultural programme	DWS, local committees, national structures, provincial authorities and industries
2	SO5a: Integrated sectoral planning approach is adopted at transboundary and national level	invite all committees to bilateral meeting and also have user committee	DWS, local committees, national structures, industries
3	SO4a: Partnerships/stewardships established and maintained	Establish ward committees to look after WQM at local level Develop working document for monitoring IWQM Introduce the concept of ecological management and stewardship	DWS, local committees, national structures, provincial structures and NGOs
4	SO11a: Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	Having educational programmes that will target stakeholders including committees at local level Having quarterly engagement to review water target, actions and interventions	DWS, CMA, DEDEA, local forum and governmental authorities
5	SO7a: Adaptive systems-based management is applied at catchment level	Develop a committee in every catchment area Align responsibilities and priorities and report back on various interventions Develop an online user system that would show water quality	DWS, CMA, DEDEA, local forum and governmental authorities

T8: Petrus du Preez (Agri Eastern Cape), Pierre Joubert (Gamtoos Irrigation Board), Mpfariseni Kennedy Ramulifho, Gcobisa Matakane (Chris Hani District Municipality), Yola Ketezwa (Kumkani FM)

#### National priorities

	Strategic objective	Activities	Key actors
1	SO3b: Inter-sector departmental structures established to support integrated WQM	To establish WQM forums – national and regional forums that are working together with an integrated reporting system	
2	SA 37: DWS to develop an investment framework including innovative mechanisms to mobilise funding for sustained support to IWQM	Sourcing of funds through investors and National Treasury for sustainability of IWQM National department to align IWQMS to SDGs in order to unlock international funding opportunities	
3	SA 50: DWS/WRC to develop and implement a capacity building programme for officials in DWS, CMA and other sector departments in systems-based, adaptive IWQM	Effective management for sustainable capacity building through skills development across all affected sectors Training of staff, mentoring, information sharing within all sectors	DWS, CMA, sector departments, local government, private sector etc.

#### Provincial priorities

	Strategic objective	Activities	Key actors
	SA2: Sector departments to harmonise policies and strategies to support IWQM	Policy development that will talk to different sector departments	DWS, COGTA
	SA9: Develop the institutional protocols to enable DWS intervention in municipalities regarding discharges from failing	Formalise structures such as forums/IWQM committee that deals with regulatory water quality matters, comprised of municipalities DWS to have strengthened regulatory section to enforce protocol	DWS
	SA12: DWS to develop a partnership framework that is fair and equitable	Development of framework that would enable all stakeholders to participate, contribute and be responsible for WQM equally	DWS
	SA 29: DWS, DEA to develop improved regulatory approaches to manage WQ pollution from land-based activities	Use of integrated regulatory approach by identifying high-risk pollution areas Implement polluter pays principle	DWS and DEA COGTA
	SA 34: CMAs to lead process with other relevant government departments and agencies, and stakeholders, to review, identify and address priority WQ challenges at regular intervals	Formulation and coordinating of working structures with different sector stakeholders and water users, with frequent meetings that prioritise	CMA

	Strategic objective	Activities	Key actors
		water quality issues/challenges	

T9: Wayne Selkirk (PCT), Dr Cherie Lynn Mack (EOH Coastal and Environmental Services), Maurice Bila, Dr Nikite Muller (Amatola Water), Phillip de Wet (DWS)

National priorities

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
1		Human capacity: gaining and retaining experience	
2		National monitoring programmes (and coordinators) need to understand local conditions to develop relevant monitoring programmes	
3		Don't create legislation that cannot be enforced	

Provincial priorities

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
1		Directed training programmes with measurable outcomes	DWS
2		Skills audit	DWS, local government
3		Revise Eastern Cape monitoring and revive programmes	DWS
4		Environmental awareness and outreach programmes	DWS, DEA, DoE, local government, civil society



T10: Nelson Odume (Rhodes University Institute for Water Research), Sonwabile Menyelwa (DWS), Luyolo Ndenze (Buffalo City Metropolitan Municipality), Bongani Makehle, Ncumisa Dingilizwe (Joe Gqabi District Municipality)

#### National priorities

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
1	SO11a: Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	Promote the establishment of centres of excellence for water education and research-linked RDI Create demand-driven training courses at all levels across the water sector Identify and establish centres of excellence	Higher education institutions WRC. DWS, municipalities, etc
2	SO5a: Integrated sectoral planning approach is adopted at transboundary and national level	Clear protocol for engagement between CMA, DWS and local government and other government departments as well as citizens	
3	SO7a: Adaptive systems-based management is applied at catchment level	Each catchment identifies key stakeholders in terms of their interest, values, as well as relationality and connection to each other and to the environment Adaptive system-based management that proactively allocates responsibilities, tasks and rights to all key stakeholders within a catchment	CMAs, catchment management forums, water users, citizens
4	SO10a: An integrated and functioning WQ monitoring network	Identify priority pollutants and improved monitoring techniques Develop water quality predictive capacity Streamline information system for rapid response	Water services institutions, DWS, research institutions, CMAs, municipalities, etc.

#### Provincial priorities

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
	SO3a: DWS departmental structures support integrated WQM	Establishment of polycentric governance structures for effective and efficient interaction between government departments, from national catchment to local level as well as between civil society, private sector and the citizenry	DWS, municipalities, water services institutions, DEA, DAFF, COGTA, regional and local offices, civil society, academic institutions, community-based organisations, etc
	SO6a: Licencing processes streamlined	Establishment of CMAs should be prioritised Proactively determine Reserve to fast track	DWS, DEA, DAFF, consultants and all water users

	Strategic objective	Activities	Key actors
		WULA Integrate water quality and quantity Expedite actions on the establishment of CMAs for decentralising authorisation of WULA	





## DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS) - WP10978

### Implications of the WQM Policy and IWQM Strategy for Implementation

#### Regional Workshop: Free State

14<sup>th</sup> October 2016 | BON Hotel Bloemfontein | 09h00 – 15h45

### AGENDA

**Chairperson:** Provincial Chair/P. Viljoen

**Purpose of Meeting:**

- To create awareness regarding the WQM Policy and the IWQM Strategy;
- To obtain comments and inputs into the WQM Policy and the IWQM Strategy;
- To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;
- To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and
- To outline the way forward.

Item	Time	Topic	Responsible
	09h00 – 09h30	Arrival Tea and Coffee	
1	09h30 – 09h50	Welcome, Introductions and Purpose of the Meeting	Chair
2	09h50 – 10h30	Background to Water Quality Management in SA <ul style="list-style-type: none"><li>▪ <i>History, Issues and Challenges</i></li><li>▪ <i>Discussion on Regional Context</i></li></ul>	DWS Project Team
3	10h30 – 11h30	Development of the IWQM Strategy <ul style="list-style-type: none"><li>▪ <i>WQM Policy Responses</i></li><li>▪ <i>IWQM Strategic Responses</i></li><li>▪ Discussion</li></ul>	Pegasys
4	11h30 – 12h45	<b>Workshop 1: Strategic Actions: Review and Prioritisation</b>	Facilitator: Pegasys
	12h45 - 13h30	Lunch	
5	13h30 – 14h45	<b>Workshop 2: Implications for Implementation</b>	Facilitator: Pegasys
7	14h45 – 15h10	Feedback Discussion	Pegasys
8	15h10 – 15h30	Way forward and Closure	Chair



**water & sanitation**  
 Department:  
 Water and Sanitation  
 REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF WATER AND SANITATION  
 DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS)  
 (WP10978)  
 MINUTES OF ROADSHOW WORKSHOP**

**Date:** 14 October 2016

**Time:** 09:00–13:45

**Venue:** Bon Hotel, Bloemfontein

**Present:**

Dr Johan van der Merwe	Bloem Water
Tascha Vos	Centre for Environmental Management, University of the Free State
Kenneth Masindi	DWS
Gerda Venter	DWS Free State
Richard Phaiphai	DWS Free State
Quentin Kemp	DWS Potchefstroom
Jackie Jay	DWS Water Quality Planning
Jurgo van Wyk	DWS Water Quality Planning: Central
Tsoeu Sefojane	Free State Department of Agriculture
Hennie Grobler	Free State Department of Agriculture and Rural Development
Kioena Mathekga	Free State Department of Agriculture and Rural Development
Trinity Hleza	Free State Department of Agriculture and Rural Development
Pietie Wagener	Mangaung Metro
Mamoretlo Koaho	Masilonyana Municipality
Jan Vos	MISA
Prossy Nakanjako	MISA
Soga Thembele	Nala Local Municipality
Thabang Moses	Nala Local Municipality
Hanke du Toit	Oranje-Riet Water User Association
Derek Weston	Pegasys
Traci Reddy	Pegasys
Hope Mthembu	Phumelela Local Municipality
Leslie Putsoe	Phumelela Local Municipality
Robyn Arnold	Project team
Hans Mey	Sedibeng Water
Hennie Pretorius	Sibanye Gold

**WELCOME, INTRODUCTION AND PURPOSE OF THE MEETING**

Mr Richard Phaiphai (DWS Free State) opened the meeting and welcomed everyone.

Mr Weston noted that the purpose of the meeting was to:

- Create awareness regarding the WQM Policy and the IWQM Strategy
- Obtain comments and inputs into the WQM Policy and the IWQM Strategy
- Initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the water management areas
- Solicit initial inputs for the conversion of the IWQM Policy and the IWQM Strategy into practice
- Outline the way forward

**BACKGROUND TO WATER QUALITY MANAGEMENT IN SOUTH AFRICA**

Mr Weston gave a presentation on the background to water quality management in South Africa.

South Africa is faced with many of the problems related to poor water quality; this may be attributed to the vast number of challenges we face with managing the various sources of pollution, including air

pollution, agricultural drift and run-off, industrial wastewater discharges, urban run-off, and challenge with managing run-off from unserved areas, mine water and sewage water.

Many factors contribute to the WQM challenges, including:

- Sources of water pollution are complex. There are varying sources of pollution (point source, diffuse) and water quality changes along the hydrological regime.
- Catchments are complex socio-economic systems, and some are shared watercourses: Sufficiently integrated and adaptive approaches within and across catchments should be implemented, which is currently lacking.
- Sufficient alignment and coordination is needed within and between government departments. WQM is hampered by poor coordination and conflicting approaches.
- There is insufficient finance for WQM. The available financial resources are insufficient and do not recognise the investment required to counteract economic harm.
- There is insufficient data and information management: Data sharing is a challenge, including transboundary-management. There is a challenge in ensuring that the public has access to information.
- There are capacity and skills constraints in the field of WQM

In response to the country's need to take an improved integrated approach to WQM, DWS has initiated a project to develop a national, integrated Water Quality Management (WQM) Strategy, but before the strategy could be developed the current WQM policies, which were needed in order to give direction to the strategy, would require revision. This is due to the fact that whilst innovative at the time of publication, the current policies (Water Quality Management Policies and Strategies in the RSA in 1991 and the 2006 Resource Directed Management of Water Quality Policy) are dated and not integrated, and need to be aligned with the current overarching policy and legislative frameworks, socio-economic trends and emerging global issues.

The contract for the project was signed on 4 October 2015 and would continue until September 2017. The project comprises five phases: Inception, Assessment, Policy, Strategy and Policy into Practice. The policy and strategy were being developed through an iterative process, whereby first editions of the policy and strategy would be sent out for comment, and would be amended in response to the comments received. The project was currently in the Strategy phase, which spanned from August 2016 until February 2017, which entailed revise, update & integrate existing WQM strategies based on inputs from Stakeholders & assessment phase

All documents produced were available on the DWS project website ([www.dws.gov.za/projects/iwqms](http://www.dws.gov.za/projects/iwqms)). The following documents had been completed to date:

- Inception Report
- Review of WQM Policies and Strategies
- Review of WQM Institutional Arrangements
- Review of WQM Instruments
- Note on the WQM Challenges
- Water Quality Glossary
- Capacity Building Strategy
- Stakeholder Communication Strategy
- Newsletters 1 and 2
- Note on the WQM Policy Principles
- WQM Policy (Edition 1)
- Note on the Strategic Framework

The identified water quality issues that need to be addressed through the WQM Policy and Strategy include: salinisation, nutrient enrichment and eutrophication, acidification and acid mine drainage, erosion and sedimentation, urban runoff pollution, litter and solid waste, microbial pollution, waterborne pathogens and human health, agrochemicals and toxic substances, dissolved oxygen and organic pollution, trace metals, hydrocarbon pollution, thermal pollution, nanoparticles and radioactivity.

There is already considerable knowledge and understanding of many of the priority water quality issues (e.g. eutrophication, salinisation) but many of the issues need more research (e.g. the impact of nanoparticles, metals, hydrocarbons and agrichemicals).

Impacts on water quality by industry, mining, municipalities, mining and urban wash-off were considered, and the following issues were identified:

- Municipalities: lack of maintenance of wastewater infrastructure, inappropriate technologies, 'unsexy' infrastructure, the need for financial incentives to attract industry, lack of enforcement, lack of ownership by affected communities, lack of appropriate bylaws, lack of adequate / appropriate urban planning, understanding of mandates is confused, capacity challenges, insufficient resourcing, labour challenges, poor budgeting/ not ring-fencing budgets, lack of political support, politically embarrassing, poor understanding of importance, unsustainable financial model, rapid urbanisation, supply trumps quality
- Industry: not meeting discharge standards in municipal environments, legacy water quality issues, wastewater treatment works (WWTW) technology inappropriate, municipalities treat industry as source of revenue, WWTW removes incentives to pre-treat, WDCA on hold, political pressure to attract industry, no incentives to treat, transfers responsibility to meet standards to local municipalities, lack of trust between industry and government, lack of enforcement, inappropriate licence conditions, lack of capacity, ineffective monitoring, limited communication, poor cooperative governance
- Agriculture: poor land use practices, over-irrigation, over-fertilisation, over-abstraction, varying contexts (e.g. small vs commercial, communal), extension services weak, poor enforcement, capacity challenges, dispersed spatial nature of agriculture, lack of financial resources, lack of accountability by both government and farmers, jobs trump environment and water quality, not understood to be a priority, poor cooperative governance
- Urban wash-off: degradation of wetlands, canalisation of rivers and the degradation of riparian areas and developments in floodplains; lack of maintenance of infrastructure; rapid growth in poorly serviced peri-urban dense settlements; lack of ownership by society; lack of enforcement and lack of bylaws; mindset of not needing to treat; lack of adequate / appropriate urban planning; understanding of mandates is confused; capacity challenges; insufficient resourcing, and spend requirements are huge; lack of political support; poor understanding of importance; rapid urbanisation; unsustainable financial model
- Mining: Existing mines not meeting water quality discharge standards; government facing significant challenges in managing impact of abandoned mines; uncertainty around mine closure funds and meeting new closure requirements; insufficient control monitoring and enforcement function at DWS (at national through to local level, also linked to capacity to implement, know-how to hold someone accountable and ability to write proper licence conditions); Weak technical capacity, with water quality officers not knowing how they fit in, inaccurate water use licences, not sure how to enforce, cannot read and interpret water data, lack of knowledge around protected areas or understanding what that really means; Political interference in establishment of mines (e.g. unlicensed mines, establishment of mining in areas that are protected, competing mandates, short-term benefit overshadows long term sustainability); poor cooperative governance and mismatch in departmental mandates; insufficient financial resources

Future trends that with implications for water quality are anticipated to be: climate change, hydraulic fracturing, renewable energy, water–energy–food security nexus, growth of inadequately serviced densely populated settlements and water re-use.

A SWOT analysis identified 28 strengths, 62 weaknesses, 32 opportunities and 45 threats. The following priority actions are proposed in order to respond to the SWOT analysis:

- Promote integration of water quality and quantity
- Formalise cooperative governance structures, processes and resources for water quality regulatory actions
- Formally address overlaps of statutory/regulatory/oversight mandates that affect WQM
- Formalise institutional/legal framework for intervention in municipalities with failing water and sanitation functions
- Strategy and plan for sectoral partnerships and public–private partnerships
- Rolling engagement with DWS senior management on WQM
- Rolling public engagement on joint custodianship of the resource

- Intensify WQM capacity development across sectors
- Overhaul all aspects of water quality monitoring and data management
- Intensify all aspects of control monitoring and enforcement
- Mobilise ex-DWS budget funding of WQM initiatives.

In the international context, good quality water is the foundation for achieving the UN Sustainable Development Goals (SDGs) and further drives the need for an integrated WQM Policy and Strategy for South Africa, for example:

- Goal 1 & 2: No hunger – good water quality is required for the rural and agricultural sector for food production, which is a crucial step in poverty reduction
- Goal 6: Clean water and sanitation
- Goal 14: Life below water speaks to the health of our aquatic systems, which is fundamentally dependent on certain water quality requirements and is affected by changes in water quality.

The literature review of the international experience of WQM identified a number of trends:

#### Strategic alignment

- Water quality problems are increasingly shifting to non-point sources related to failing infrastructure
- Basin water quality rehabilitation and management is a long-term process requiring institutional capacity and financial sustainability, within broader water resources management
- Water resources crisis provides an opportunity to gain political will and momentum, but needs to be sustained
- Catchment WQM requires a combination of technical, regulatory, economic, financial and institutional interventions
- Influencing government financing mechanisms provides a critical means of enabling water quality action
- The SDG indicator process provides an opportunity to address water quality issues.

#### Coherent instruments

- Regulatory and strategic approaches are increasingly focusing on minimising pollution by being stringent on priority sectors
- Clean tech supported by green economy initiatives and financing mechanisms provides targeted ways of reducing pollution at source
- Coherent regulatory regimes and strategic institutional approaches supported by appropriate financial mechanisms and cooperative actions
- Natural (green) infrastructure is recognised as critical aspect of integrated management of water quality in urban and rural settings
- Various economic (and financial) approaches have been attempted, the selection of which should be depend on the individual context and may be targeted
- Good water quality monitoring enables enforcement and compliance, but this can be incrementally developed and funded.

#### Partnerships

- Government needs to play a lead role in driving, coordinating and often financing the remediation, and not always just water quality managers
- Building long-term partnerships is fundamental to sustained and effective local solutions
- Basin institutions lead catchment rehabilitation/protection , through a range of rural and urban measures
- Alignment and consistency is an emerging challenge that requires cooperative governance and regulatory/strategic approaches (vertical and horizontal)
- Private sector has a crucial role to play in minimising its impacts on water resources, and collaborating through water stewardship partnerships
- Civil society has a key role

#### **Discussion**

Johan van der Merwe (Bloem Water) voiced three concerns:

- There seems to be a gap in engagement between DWS senior management and people on the ground.



- The National Groundwater Strategy is open for comment. Groundwater has been considered public water since 1994, but the management of surface water and groundwater has not been integrated. Could the 12 themes for groundwater possibly be integrated with the IWQM Strategy?
- It is not possible to manage what is not measured. There is not enough monitoring on the Oranje Riet. Some key provincial office staff are not present at the workshop.

Hennie Pretorius (Sibanye Gold) noted that his company conducts monitoring at huge cost and diligently submits the results to DWS in compliance with their licence conditions, but the department does not seem to do anything with the data. There is an abundance of information available from hundreds of sampling points that are monitored weekly, but this needs to be captured in an accessible national electronic database. This could be made a requirement in the licence conditions (since the data are still sometimes submitted in hard copy). The data need to be integrated. Sibanye Gold sometimes even monitors 50 to 100 km downstream of their operations in order to measure the impact.

Jurgo van Wyk (DWS Water Quality Planning: Central) noted that the comments of stakeholders on the WQM Policy and Strategy would be considered in the current legislative review process, and more optimal monitoring could be made a legal requirement.

Hope Mthembu (Phumelela Local Municipality) noted that DWS had upgraded the treatment works in her municipality in the last two months, and once fully capacitated, raw sewage would not go into the dam. She stressed that DWS must be part of the workshops. She was concerned that asbestos pipes were still being used. Another concern was that qualified controllers will not work for the salary of R4200 per month, so the work is done by general workers. DWS had appointed a company to do an assessment. The municipality has a R20 million MIG, but need R240 million just for the sewerage works. The municipality needs to start afresh with the infrastructure.

Mr Weston acknowledged the need for conversation with National Treasury and COGTA as municipalities do not have the funds they need to do what they have to do.

Pietie Wagener (Mangaung Metro) emphasised the need for more incentives to reuse wastewater. The implementation of the WDCS might have forced municipalities to reuse water and to reduce water losses. Only drought will force people to reuse water, but this is not the right way to achieve that objective.

Hans Mey (Sedibeng Water) observed that the better-managed municipalities are considering incentives for good quality outflow, but DWS does not seem to have the power to enforce this for the smaller and less well-managed municipalities. Mines and industries are taken to task for poor quality water, but municipalities are not, even though they are big polluters.

Hennie Pretorius (Sibanye Gold) emphasised the lack of fairness in that DWS will prosecute a mine for pollution but not a municipality.

Jurgo van Wyk (DWS Water Quality Planning: Central) asked what the solution might be, and how to ensure accountability. Mr Weston noted that municipalities say they do not have the resources and tools

Hans Mey (Sedibeng Water) commented on the lack of coordination between various roleplayers in municipalities. The population is growing, but sewerage and drinking water do not receive attention and become increasingly inadequate.

Kenneth Masindi (DWS) commented that DWS has good policies, strategies and guidelines and tries to keep them updated, but implementation is a challenge, for example, the challenges of implementing the National Water Resource Strategy.

Tsoeu Sefojane (Free State Department of Agriculture) commented on the experience of farmers applying for water use licences and suggested the need to add elements of protection to water use applications.

Kioena Mathekga (Free State Department of Agriculture and Rural Development) suggested that for implementation, the WQM Policy should incorporate a plan of dissemination and awareness. Mr Weston concurred on the need to build broader awareness across sectors.

## DEVELOPMENT OF THE IWQM STRATEGY

Ms Reddy gave a presentation on the development of the IWQM Strategy.

A series of steps was followed in developing the WQM Policy and Strategy:

- Outcome 1: Consensus on prioritised water quality issues was preceded by a high-level description a prioritisation of water quality issues
- Outcome 2: Identification of WQM challenges and gaps was preceded by a root cause analysis, insights from a literature review and WQM SWOT analysis
- Outcome 3: Foundation for policy, strategy processes was preceded by the consolidation and way forward.

The core concept of the WQM Policy is that water quality affects the economy and society's well-being. Water quality is a developmental issue. DWS is the sector leader in WQM, but everyone has a role to play, and a joint approach between government departments, the private sector (through initiatives such as the Strategic Water Partners Network) and civil society forms the basis of tackling the water quality challenges facing the country.

The Policy is a collation of existing policies as they relate to WQM, with stakeholder inputs and a literature survey used to identify gaps. It draws on the 1991 Water Quality Management Policies and Strategies in the RSA, the 2006 Resource Directed Management of Water Quality Policy, the National Development Plan, the National Water Act (NWA), the National Water Resource Strategy, the UN Sustainable Development Goals (Agenda 2063), current DWS policies and other departmental policies, including those of the DMR, DEA, DAFF and DRDLR. It was developed based on the information from the Assessment phase, inputs from the project committees, and importantly, inputs from stakeholder discussions. It strengthens existing policy, but also proposes several new positions, the largest being that WQM need to be an inter-governmental responsibility, with DWS as the sector leader. It is hoped that further consultations will strengthen the policy even more.

The aim of the WQM Policy is to:

- Elevate water quality and water quality management on the country's agenda.
- Formalise and institutionalise a common approach to water quality management in South Africa.
- Support a consistent inter-departmental approach to how water quality is managed in the country.
- Support cooperative and integrated approaches to water quality management across sectors.
- Address operational aspects such as taking an integrated approach, broadening finance mechanisms and improving knowledge and information in the execution of the water quality management function.
- Provide a framework to realise improvements in water quality in key systems.
- Guide the development of an IWQM Strategy.

The WQM principles, Policy and Strategy are aligned in the following way:

The principles establish the fundamental norms, rules, or values that represent what is desirable to the country in terms of WQM. Principles form the foundation on which the policy is developed.

The Policy provides the overall vision and framework for how water quality should be managed in South Africa for at least, the next two decades.

The Strategy describes the prioritised strategic actions that need to take place over a five year horizon to realise the WQM envisaged by the policy, together with the enabling environment.

The implementation plan describes roles, responsibilities, timeframes and resource requirements to achieve the strategic actions.

The roll-out of the implementation plan involves monitoring and reporting on implementation performance and the effect the Policy and Strategy implementation has had on water resources.

1. The 15 policy principles developed in the initial phase were structured around the four areas of governance, economic and finance, operational, and data and information. Several of the policy principles were new in respect of their application to WQM, namely those that are underlined in the following list:

- Governance
  - Principle 1: Government-wide water quality management
  - Principle 2: Subsidiarity and accountability
  - Principle 3: Transboundary water quality management
  - Principle 4: Partnerships
  - Principle 5: Administrative fairness and implementability
  - Principle 6: Administrative penalties (administered by DWS, not through the justice system)
- Economic and finance
  - Principle 7: Water quality is a developmental issue
  - Principle 8: Broadened funding principles
  - Principle 9: Polluter pays
- Operational
  - Principle 10: An integrated and adaptive approach
  - Principle 11: Hierarchies of water use and pollution management decision-making
  - Principle 12: Green/ecological infrastructure restoration and rehabilitation
  - Principle 13: Risk-based approach
- Data and information
  - Principle 14: Collection and protection of data
  - Principle 15: Publicly available information

The Policy is divided into four chapters, each of which describes the problem/challenge that needs to be resolved through the policy; the response to mitigate the challenge; and the principles to be adopted in responding to the challenge. The four chapters are:

- Chapter A: Inclusive WQM for South Africa
- Chapter B: Integrated, adaptive water quality regulation and management
- Chapter C: Financing IWQM
- Chapter D: Building the knowledge and capacity base

**Chapter A: Inclusive WQM for South Africa** deals with the need to see/understand the impact of water quality on the socio-economic and ecological development in the country; the need for an intra- and inter-departmental response to the WQM challenges in the country; some of the key policy aspects that must be addressed in achieving such an approach; and the need to build partnerships between government departments, civil society and the private sector in order to be able to successfully address the challenges. It addresses principles 1, 2, 4 and 7.

**Chapter 2: Integrated, adaptive water quality regulation and management** spells out the nature of an integrated approach to adaptive WQM and key policy framings of the integrated approach to regulation and adaptive management of water quality, including integrated, adaptive catchment planning, following a risk-based approach; and applying a hierarchy approach to decision-making. It addresses principles 3, 4, 5, 10, 11, 12 and 13.

**Chapter 3: Financing IWQM** examines the financial underpinnings of IWQM, looking at tools for financing the required actions, as well as the role of the private sector in this regard. It addresses principles 4, 6, 8 and 9.

**Chapter 4: Building the knowledge and capacity base** describes the policy with regard to the knowledge, human resource capacity and information base requirements to be able to implement the policy approaches. It addressed principles 4, 14 and 15.

It is tempting to believe that it is possible to follow a straight line from setting to achieving the desired objective, but in the real world this is never straightforward and the context is uncertain. Adaptive management therefore becomes a critical part of the process, necessitating ongoing monitoring and evaluation, and the periodic revision of the strategy and implementation plans.

Global good practice has shifted away from setting strategic plans with objectives to be set in a linear way. Global best practice in the private sector places less emphasis on sticking to a strategic plan than on building a rich and engaging corporate purpose; focuses less on formal structural design and more on effective management processes; is less concerned with controlling employees' behaviour than with developing their capabilities and broadening their perspective; and moves beyond the

doctrine of strategy, structure and systems to a more organic model built on the development of purpose, process and people.

The challenge is to ensure that the IWQM strategy also builds the capability of people and institutions to manage in an adaptive and proactive manner that responds in a constructive way to the changing environment.

The strategic intent of the Policy and Strategy:

- Is aligned with the strategic objectives of the policy, while being consistent with broader water and development strategies (National Development Plan, NWRS2)
- Is focused on a short term timeframe, while building a platform for future strategies in line with the policy and visions for water quality management
- Prioritises a limited number of critical concerns, while ensuring that other issues are addressed through ongoing management or monitoring for future prioritisation
- Is relevant at national, catchment and local scales, while ensuring horizontal alignment across sectors and institutions at each scale
- Guides the actions/activities to be described in the implementation plans on a short-term basis
- Allows for adaptive response to changing circumstances and achievements based on effective ongoing monitoring and evaluation, during its timeframe.

The vision for WQM in South Africa is that government, in partnership with the private sector and civil society secure good water quality for all, forever.

The mission is to:

- Support a consistent interdepartmental approach to how water quality is managed in the country
- Support cooperation and integrated approaches to WQM across sectors, including civil society
- Adopt an adaptive management approach in which co-creation and co-learning by key players is entrenched
- Realise improvements in water quality in key systems
- Start to build capacity for longer-term improvement in water quality.

The goals of the WQM Policy and Strategy are:

Goal 1: Improved alignment of Policy, Strategy and legislation

Goal 2: Improved governance

Goal 3: Improved, efficient and effective WQM

Goal 4: Innovative finance

Goal 5: Improved knowledge and information management.

The goals are designed to address various strategic issues:

Goal 1: Improved alignment of Policy, Strategy and legislation

- Strategic issue 1: Harmonise policies and strategies to enable improved integrated WQM
- Strategic issue 2: Legislative review and amendments to enable integrated WQM

Goal 2: Improved governance

- Strategic issue 3: Improve integrated WQM institutional structuring
- Strategic issue 4: Formalise governance frameworks to support non-governmental engagements

Goal 3: Improved, efficient and effective WQM

- Strategic issue 5: Improve coordinated integrated planning
- Strategic issue 6: Strengthen integrated WQM regulation, compliance and enforcement
- Strategic issue 7: Applications of systems-based adaptive management approaches

Goal 4: Innovative finance

- Strategic issue 8: Improve and sustain fiscal support for integrated WQM
- Strategic issue 9: Develop pricing and incentive systems that support integrated WQM

Goal 5: Improved knowledge and information management.

- Strategic issue 10: Strengthen monitoring and information management
- Strategic issue 11: Build water quality and WQM capacity through education, training and communication

Whilst there is a need to change our approach to WQM, it must be recognised that there is a well-conceived framework for WQM that needs to continue being implemented.

Implementation would involve:

- **Fixing priority issues:** This will provide the opportunity to realise success in addressing key issues and will embark on looking at rehabilitation or remediation in critical catchments. This will also entail looking at priority issues that can support the building of capacity and the on-going application of exiting instruments.
- **Building capacity:** Whilst it is understood that the capacity that the water sector requires will not be in place within the short term, in terms of skills, integrated information and systems, this is an important issue that needs to be driven immediately and continued over time in order to build adaptive management capacity. This also includes the development of cooperative partnerships across government, private sector and civil society.
- **Maintaining and sustaining the system:** The on-going processes that the DWS has in place will continue to be utilised to manage water quality across the country. These instruments and systems may require strengthening over time. This could involve exploring ways in which to improve and simplify some these instruments. This would include a drive to look at where instruments and systems can be integrated between departments in order to improve inter-departmental approaches.

## Discussion

Prossy Nakanjako (MISA) asked whether there is a plan to disseminate information from the workshop at district level, as that is where support is needed. He observed that there were very few municipal representatives at the workshop, yet they would be at the forefront of implementation of the WQM Policy and Strategy.

Ms Reddy responded that the intention had been to have diverse representation at the workshop, and municipal officials had been invited. Once the Policy and Strategy had been finalised, the implementation plan would be developed, which would include embedding the approach. DWS would develop training programmes for implementation. Another aim was to understand the issues. A workshop on the implementation of the strategy was planned for next year.

Hennie Pretorius (Sibanye Gold) asked how the formulation and implementation of administrative penalties was envisaged; whether a penalty would be imposed on a company or an individual; and whether a ticket would be written out there and then when an offence occurs and is detected.

Jurgo van Wyk (DWS Water Quality Planning: Central) responded that imposing administrative penalties would require legislative amendment, and the intention would be to open the possibility of imposing such penalties as wide as possible (e.g. so as to be able to hold a company, individual or manager responsible). Getting a successful prosecution in court is complex, and the intention to have a more effective method through administrative penalties.

Hennie Pretorius (Sibanye Gold) observed that inexperienced DWS officials sometimes come to the site. Imposing administrative penalties would require more experienced people with a consistent approach. He acknowledged that his request that water users work with properly trained and competent people could be contentious.

Hanke du Toit (Oranje-Riet Water User Association) commented:

- That there was limited focus in the discussion document on localised institutions, including water boards, water services providers and water user associations.
- The discussion document mentions a new water act, but that topic has not yet been introduced to stakeholders outside DWS, which limits their understanding and input.

Ms Reddy responded that unpacking the role of localised institutions in implementing the WQM Policy and Strategy would be done during the next phase. Mr Jurgo van Wyk commented that first full draft of the new water act had been circulated in DWS at certain levels, but was still vague to officials in general. The consultation on the WQM Policy and Strategy would form an input to the legislative review process.

Tsoeu Sefojane (Free State Department of Agriculture) noted that representatives of district and local municipalities are involved on catchment management forums. Mr van Wyk acknowledged that there

are forums that function well with municipal participation. Organisations that represent the municipal sector would be invited to attend the IWQM national symposium (e.g. SALGA). The consultation process was designed to enable all relevant parties to participate, but this could not be enforced.

Tsoeu Sefojane (Free State Department of Agriculture) commented that several departments were currently amending their legislation (e.g. legislation on agriculture, the environment, and the subdivision of agricultural land). He suggested the need for a forum to avoid departments working in silos in this regard and allowing departments to cross check that the legislation is aligned rather than contradictory).

Jurgo van Wyk (DWS Water Quality Planning: Central) responded that the WQM Policy would be gazetted for comment. Since water quality is a developmental issue, it would go through the Economic Cluster on which other ministries are represented. Ms Reddy added that a national workshop with other government departments was also planned.

## **WORKSHOP 1: STRATEGIC ACTIONS: REVIEW AND PRIORITISATION**

Workshop participants worked together in teams. The objectives were to:

- Review of the strategic action list and comment and add anything that they felt was missing in the table.
- List ten critical actions that need to be addressed in the province to address water quality and its management
- List three critical actions that need to be addressed nationally to address water quality and its management

Teams recorded their responses in the Strategic Actions Table (see Appendix 3).

## **WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION**

Workshop participants worked together in the same teams as for Workshop 1. The objectives were to answer the following questions for the ten provincial actions that they had prioritised in Workshop 1:

- What are the activities required to achieve these in the province?
- Who are the key actors and what roles do they play?
- How do we ensure implementation?

Teams recorded their responses in on flipcharts, which were typed up as Appendix 4.

## **FEEDBACK DISCUSSION**

Teams had the opportunity to provide feedback to the workshop (Appendix 3 and 4).

## **WAY FORWARD**

This was the second of the provincial roadshow workshops. A workshop was scheduled for each province according to the following schedule:

Eastern Cape	East London	12 October 2016
Free State	Bloemfontein	14 October 2016
Northern Cape	Kimberley	18 October 2016
North West	Rustenburg	21st October 2016
KwaZulu-Natal	Durban	25 October 2016
Gauteng	Pretoria	28 October 2016
Mpumalanga	Nelspruit	1st November 2016
Limpopo	Polokwane	4 November 2016
Western Cape	Cape Town	9 November 2016

The next steps in the process were as follows:


- Gazette Edition 1 of WQM Policy for comment and further revise the Policy to produce Edition 2 (final edition) based on further inputs from wider stakeholder groups (and the public) and the outcomes of the IWQM Strategy development process.
- Develop IWQM Strategy Edition 2 and Implementation Priorities based on inputs from provincial workshops, inputs from project committees and inputs from focused discussions with key stakeholder groups
- National Inter-Departmental Workshop, scheduled for November or December 2016
- National Symposium, scheduled for April 2017.

## CLOSURE

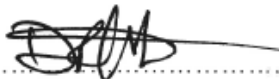
Mr Jurgo van Wyk thanked everyone for their attendance and participation. Participants would be added to the stakeholder database and would receive the newsletter. Documents related to the development of the WQM Policy could be downloaded from the project website.

Tsoeu Sefojane (Free State Department of Agriculture) asked that the project team sensitise their principals by writing letters to thank them for their representation and participation in the workshop.

The workshop closed at 13:45.

  
.....  
DWS Project Manager  
Pieter Viljoen  
Scientist Manager: Water Quality Planning

Date: 29/01/2017

  
.....  
PSP Team Leader  
Derek Weston  
Associate Director: Pegasys

Date: 17/01/2017

**APPENDIX 1: LIST OF ACRONYMS**

CMA	Catchment management agency
CME	Control monitoring and enforcement
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
DRDLR	Department of Rural Development and Land Reform
DWS	Department of Water and Sanitation
IDP	Integrated Development Plan
IWQM	Integrated water quality management
NGO	Non-governmental organisation
NWRS	National Water Resource Strategy
O&M	Operation and maintenance
RQO	Resource quality objective
SDG	Sustainable Development Goal
SWOT	Strengths, weaknesses, opportunities, threats
UK	United Kingdom
UN	United Nations
WQM	Water quality management
WSA	Water services authority
WSP	Water services provider
WUL	Water use licence
WWTW	Wastewater treatment works



**APPENDIX 2: COMMENTS FOR COMMENTS REGISTER**

<b>Comment from Free State roadshow</b>	<b>Comment made by</b>
The management of surface water and groundwater is not integrated. The 12 themes National Groundwater Strategy could possibly be integrated with the IWQM Strategy.	Johan van der Merwe (Bloem Water)
There is insufficient monitoring, and it is not possible to manage what is not measured.	Johan van der Merwe (Bloem Water)
There seems to be a gap in engagement between DWS senior management and people on the ground.	Johan van der Merwe (Bloem Water)
It is a matter of concern that key DWS provincial office staff are not present at the workshop.	Johan van der Merwe (Bloem Water) Hope Mthembu (Phumelela Local Municipality)
DWS does not use the monitoring data submitted by licensed users in compliance with their licence conditions. The data must be captured in an integrated and accessible national electronic database. This could be made a requirement in the licence conditions.	Hennie Pretorius (Sibanye Gold)
It is a matter of concern that DWS is still using asbestos pipes.	Hope Mthembu (Phumelela Local Municipality)
MIG grants are too small for municipalities to do what is required to repair and upgrade their infrastructure, particularly taking into account that the population is growing.	Hope Mthembu (Phumelela Local Municipality) Hans Mey (Sedibeng Water)
Mines and industries are taken to task for poor quality water, but municipalities are not, even though they are big polluters. There is a lack of fairness in that DWS will prosecute a mine for pollution but not a municipality.	Hans Mey (Sedibeng Water) Hennie Pretorius (Sibanye Gold)
Elements of protection should be included in water use applications.	Tsoeu Sefojane (Free State Department of Agriculture)
The WQM Policy should incorporate a plan of dissemination and awareness	Kioena Mathekga (Free State Department of Agriculture and Rural Development)
DWS officials are sometimes inexperienced. Imposing administrative penalties would require more experienced people with a consistent approach.	Hennie Pretorius (Sibanye Gold)
There was only limited focus in the discussion document on localised institutions, including water boards, water services providers and water user associations.	Hanke du Toit (Oranje-Riet Water User Association)
The discussion document mentions a new water act, but that topic has not yet been introduced to stakeholders outside DWS, which limits their understanding and input.	Hanke du Toit (Oranje-Riet Water User Association)
Proper research is needed for pit latrine use as an alternative to water-borne sewage.	Pietie Wagener (Mangaung Metro), Tsoeu Sefojane (Free State Department of Agriculture)

### APPENDIX 3: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 1: STRATEGIC ACTIONS: REVIEW AND PRIORITISATION

#### THE IWQM STRATEGIC OBJECTIVES

T1: Richard Phaiphai (DWS Free State), Jan Vos (MISA), Prossy Nakanjako (MISA), Mamoretlo Koaho (Masilonyana Municipality)

T2: Hennie Pretorius (Sibanye Gold), Thabang Mpholokeng ( Nala Local Municipality), Soga Thembile (Nala Local Municipality), Hans Mey (Sedibeng Water)

T3: Pietie Wagener (Mangaung Metro), Tsoeu Sefojane (Free State Department of Agriculture)

T4: Gerda Venter (DWS Free State), Tascha Vos (Centre for Environmental Management, University of the Free State), Trinity Hleza (Free State Department of Agriculture and Rural Development), Kioena Mathekga (Free State Department of Agriculture and Rural Development), Kenneth Masindi (DWS)

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
<b>Strategic Issue 1:</b> Harmonization of Policies and Strategic to enable improved WQM	<b>SO1a:</b> Policies and Strategies impacting upon IWQM are harmonised	T2: The combination of all water-related documents is a very good thing. Will enable even the layman to follow/understand issues T3: Simplify and make easy reading/user friendly	T3: X	T3: X
<b>STRATEGIC ISSUE 2:</b> Legislative review and amendments to enable integrated WQM	<b>SO2a:</b> NWA/WSA effectively support integrated WQM	T1: The National Office to come up with the strategy to implement the two legislations to avoid contradictions T4: Alignment to all other sector legislation	T1: X	
	<b>SO2b:</b> Other legislation effectively supports integrated WQM			
<b>STRATEGIC ISSUE 3:</b> Improved WQM institutional structuring	<b>SO3a:</b> DWS departmental structures support integrated WQM	T2: Inter-sector between departmental structures <u>as well as</u> inter-departmental structures. Integration is important between different government departments	T2: X T3: X	T1: X T2: X
	<b>SO3b:</b> Inter-sector departmental structures established to support integrated WQM	T2: Should be legally mandated. Have some powers/teeth. Should be funded in a way	T2: X	T1: X T2: X
<b>STRATEGIC ISSUE 4:</b> Formalise governance	<b>SO4a:</b> Partnerships/stewardships established and maintained	T3: Identify responsible positions at institutions who you invite to meetings		T3: X

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
frameworks to support non-governmental engagements	<b>SO4b:</b> Governance framework for active citizenry formalized			
<b>STRATEGIC ISSUE 5:</b> Improved coordination in integrated planning	<b>SO5a:</b> Integrated sectoral planning approach is adopted at transboundary and national level			
	<b>SO5b:</b> Integrated sectoral planning approach adopted in catchment/regional plans			T4: X
<b>STRATEGIC ISSUE 6:</b> Strengthen IWQM Regulation, Compliance and Enforcement	<b>SO6a:</b> Licencing processes streamlined	T1: Licence conditions must have limits that will regulate or assist in WQM T2: DWS to be more flexible in already-established areas where impacts are more or less known. Licences should be issued quicker on provisional basis. Will enhance economic growth T3: Electronic applications and feedback	T1: X T2: X	T1: X T2: X T3: X
	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	T1: It must be strengthened at provincial level to improve compliance T2: Local municipalities/district municipalities should also be held accountable. Accountability not only for easy targets! Current VERY SLOW (5-9 years) process of issuing licences has two impacts: (1) Forcing companies to operate unauthorised, (2) Hampering economic growth/job creation T3: Not any use to over-monitor	T2: X T3: X T4: X	T1: X T2: X T3: X T4: X
<b>STRATEGIC ISSUE 7:</b> Application of Systems-based Adaptive Management Approaches	<b>SO7a:</b> Adaptive systems-based management is applied at catchment level	T2: Agree, because it cuts across provincial boundaries T4 Clarification of roles and responsibilities between regional/provincial offices and CMAs with respect to WQM functions		
<b>STRATEGIC ISSUE 8:</b> Fiscal support for integrated WQM	<b>SO8a:</b> WQM interventions are financially supported by the fiscus	T2: Accountability will ensure/facilitate that money is spent wisely T3: Budget (specify use) framework T4: The finances should be made available directly to the implementing sector, either nationally, regional office or CMA	T2: X T3: X	T2: X
<b>STRATEGIC ISSUE 9:</b> Develop pricing and	<b>SO9a:</b> The Waste Discharge Charge System is implemented	T3: No, unless money stays with water users	T3: X T4: X	T1: X T3: X

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
incentives that support integrated WQM				T4: X
	<b>SO9b:</b> Mechanisms for incentivising good practice developed	T3: Reuse, even for agricultural use		T3: X
<b>STRATEGIC ISSUE 10:</b> Strengthen Monitoring and Information Management	<b>SO10a:</b> An integrated and functioning WQ monitoring network	T3: User friendly and accessible T4: Dissemination of information to public		T2: X T4: X
	<b>SO10b:</b> Information systems that are current and accessible to support adaptive WQM	T2: Incorporation of all monitoring systems into one central system T3: User friendly and accessible	T3: X	T2: X
	<b>SO10c:</b> Routine assessments inform adaptive WQM	T3: User friendly and accessible		T2: X
<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	T2: Encourage volunteerism amongst different industries/role players. Skills transfer T3: Accessible	T3: X	T2: X T4: X
	<b>SO11b:</b> WQM decisions are underpinned by best practice, research and innovation	T2: Water should be included at the primary school curriculum level. Practicals/plant visits important		T2: X
	<b>SO11c:</b> A well informed and actively engaged South Africa	T1: Implement awareness campaign to the community to take ownership of WQM	T1: X	T2: X

**General Comments:**

T3: Proper research needed for pit latrine use as alternative to water-borne

#### APPENDIX 4: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION

T1: Richard Phaiphai (DWS Free State), Jan Vos (MISA), Prossy Nakanjako (MISA), Mamoretlo Koaho (Masilonyana Municipality)

	Strategic objective	Activities	Key actors
1	SO3a: DWS departmental structures support integrated WQM	Harmonised structure at national and provincial level	National and provincial DWS
2	SO3b: Inter-sector departmental structures established to support integrated WQM	Stakeholder engagements through forums, workshops	DWS and stakeholders (e.g. water boards, water services authorities)
3	SO6a: Licencing processes streamlined	Licensing processes to be user friendly to stakeholders (e.g. applications)	DWS
4	SO6b: Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	To improve access to policies, procedures and practices	DWS provincial and relevant stakeholders
5	SO9a: The Waste Discharge Charge System is implemented	Develop pricing strategy to be in place	DWS

T2: Hennie Pretorius (Sibanye Gold), Thabang Mpholokeng (Nala Local Municipality), Soga Thembile (Nala Local Municipality), Hans Mey (Sedibeng Water)

	Strategic objective	Activities	Key actors
1	STRATEGIC ISSUE 3: Improved WQM institutional structuring	<ul style="list-style-type: none"> <li>Properly resourced department by competent well-qualified professionals</li> <li>Relationship between CMA and DWS/roles and responsibilities</li> <li>Proper coordination between different government departments/integration!</li> <li>Establish awareness among other departments with respect to water management issues and legislative requirements</li> <li>Establish mechanism to report water management issues (enhance existing protocols)</li> </ul>	
2	STRATEGIC ISSUE 6: Strengthen IWQM Regulation, Compliance and Enforcement	<ul style="list-style-type: none"> <li>Licence applications to be handled more effectively. More flexible with current mining operations</li> <li>Issue realistic and achievable water use licences (WULs) that are aligned to the water quality and quantity objectives of that area</li> <li>The water qualities,</li> </ul>	

	Strategic objective	Activities	Key actors
		biomonitoring and toxicity analyses in the WUL need to be aligned <ul style="list-style-type: none"> <li>Consider expanding the General Authorisation process for known and low-risk activities</li> </ul>	
3	STRATEGIC ISSUE 8: Fiscal support for integrated WQM	Accountability is important. Officials to understand their responsibilities and accountabilities The above will facilitate water quality/quantity budget application to fiscus Sufficient funding/support necessary (not R6 million instead of R60 million)	
4	STRATEGIC ISSUE 10: Strengthen Monitoring and Information Management	<ul style="list-style-type: none"> <li>Establish one central information management system</li> <li>Proper coordination between different role-players to optimise current monitoring programmes</li> <li>Monitoring programmes should be risk based</li> <li>Data should be transformed into information. Good information will assist to manage properly</li> </ul>	
5	STRATEGIC ISSUE 11: Build WQ and WQM Capacity through Education, Training and Communication	<ul style="list-style-type: none"> <li>Long term: start at primary school level. Part of curriculum and practicals</li> <li>Short term: To make senior managers/officials aware of their responsibilities and <u>accountabilities</u> with respect to water quality and quantity</li> </ul>	

T3: Pietie Wagener (Mangaung Metro), Tsoeu Sefojane (Free State Department of Agriculture)

	Strategic objective	Activities	Key actors
1	SO1a: Policies and Strategies impacting upon IWQM are harmonised	More cooperation between WSA provincial level and municipalities when it comes to information sharing Set up electronic network – regular communication	Provincial bodies Municipalities WSA/P Water user associations
2	SO6a: Licencing processes streamlined	Licensing must be done at a district level and electronically done with feedback Electronic applications	Extension officers

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
3	SO9b: Mechanisms for incentivising good practice developed	Incentives on reuse of water. Work together with agriculture and private sector on reuse	Reuse of water by agriculture and private sector

T4: Gerda Venter (DWS Free State), Tascha Vos (Centre for Environmental Management, University of the Free State), Trinity Hleza (Free State Department of Agriculture and Rural Development), Kioena Mathekga (Free State Department of Agriculture and Rural Development), Kenneth Masindi (DWS)

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
1	SO5b: Integrated sectoral planning approach adopted in catchment/regional plans	Strengthen attendance of meeting (especially municipalities) Planning: involvement of all departments and sectors (e.g. IDPs and annual performance plans)	All government departments municipalities CMAs, water user associations, irrigation boards, water boards Interested and affected parties (including NGOs)
2	SO6b: Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	Develop alternative tools to support municipalities in terms of cooperative government	DWS Municipalities All water users National Treasury
3	SO9a: The Waste Discharge Charge System is implemented	<ul style="list-style-type: none"> <li>Effective monitoring to be done by regional offices</li> <li>Ensure compliance to resource quality objectives (RQOs)</li> </ul>	Government departments and water management institutions (WMLs) Water users
4	SO10a: An integrated and functioning WQ monitoring network	<ul style="list-style-type: none"> <li>Consistent water quality monitoring</li> <li>Accuracy of data and capturing on database</li> <li>Integrated water quality network</li> <li>Water quality reports to be made available to public</li> </ul>	



## DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS) - WP10978

### Implications of the WQM Policy and IWQM Strategy for Implementation

#### Regional Workshop: Northern Cape

18<sup>th</sup> October 2016 | Flamingo Casino Kimberley | 09h00 – 15h45

### AGENDA

**Chairperson:** Provincial Chair/P. Viljoen

#### **Purpose of Meeting:**

- To create awareness regarding the WQM Policy and the IWQM Strategy;
- To obtain comments and inputs into the WQM Policy and the IWQM Strategy;
- To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;
- To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and
- To outline the way forward.

Item	Time	Topic	Responsible
	09h00 – 09h30	Arrival Tea and Coffee	
1	09h30 – 09h50	Welcome, Introductions and Purpose of the Meeting	Chair
2	09h50 – 10h30	Background to Water Quality Management in SA <ul style="list-style-type: none"><li>▪ <i>History, Issues and Challenges</i></li><li>▪ <i>Discussion on Regional Context</i></li></ul>	DWS Project Team
3	10h30 – 11h30	Development of the IWQM Strategy <ul style="list-style-type: none"><li>▪ <i>WQM Policy Responses</i></li><li>▪ <i>IWQM Strategic Responses</i></li><li>▪ Discussion</li></ul>	Pegasys
4	11h30 – 12h45	<b>Workshop 1: Strategic Actions: Review and Prioritisation</b>	Facilitator: Pegasys
	12h45 - 13h30	Lunch	
5	13h30 – 14h45	<b>Workshop 2: Implications for Implementation</b>	Facilitator: Pegasys
7	14h45 – 15h10	Feedback Discussion	Pegasys
8	15h10 – 15h30	Way forward and Closure	Chair





**water & sanitation**  
 Department:  
 Water and Sanitation  
 REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF WATER AND SANITATION  
 DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS)  
 (WP10978)  
 MINUTES OF ROADSHOW WORKSHOP**

**Date:** 18 October 2016

**Time:** 09:00–15:00

**Venue:** Flamingo Casino and Conference Centre, Kimberley

**Present:**

Henno Gericke	Agri Northern Cape
Hannes de Wet	Department Co-operative Governance, Human Settlements and
Lizette Schön	Traditional Affairs (MIG)
Marizel van As	Department of Agriculture (Land Care)
Danita Hohne	DWS Geo Northern Cape
Jan Makhetha	DWS Kimberley
Mmereki Mokgadi	DWS Kimberley (Geohydro)
Gawie van Dyk	DWS Northern Cape
Lucky Baloyi	DWS Northern Cape
Khutjo Sekwaila	DWS OPCMA
Rendani Ndou	DWS Resource Protection and Waste
Jackie Jay	DWS Water Quality Planning
Jurgo van Wyk	DWS Water Quality Planning: Central
Bennie Viljoen	DWS Water Supply and Sanitation
Kobus Streuders	DWS Water Supply and Sanitation
Peet van der Walt	Frances Baard District Municipality
Terry Stoffel	Frances Baard District Municipality
Henri Coetzee	Kakamas Water User Association
Loewellyn van Wyk	Kakamas Water User Association
Chamunorwa Moshakvanhu	MISA
Hendrik du Plessis	MISA Renosterberg
Dr Johan van der Merwe	Modder-Riet Catchment Management Forum & Bloem Water
Peter Ramollo	Northern Cape Department of Environment and Nature Conservation
Derek Weston	Pegasys
Traci Reddy	Pegasys
Stephan van Wyk	Petra Diamonds
Jan Viljoen	Private Consultant
Robyn Arnold	Project team
Brenda van Zyl	Rockwell Diamonds
L van As	Source Point
N Flemming	Source Point

**WELCOME, INTRODUCTIONS AND PURPOSE OF THE MEETING**

Mr Gawie van Dyk opened the workshop and welcomed everyone on behalf of the regional head, Mr Abe Abrahams. He noted that it was gratifying that most of the water-related sectors in the Northern Cape were represented. He allowed a round of introductions. Mr van Dyk emphasised the importance of water quality in a water-scarce region such as the Northern Cape that receives half the world average rainfall. He allowed a round of introductions.

Mr Jurgo van Wyk welcomed everyone on behalf of the IWQMS project and noted that the focus of the workshop would be threefold, on the background information and challenges; the Policy and strategy (Edition 1 of each was being finalised) and the implementation plan. He emphasised that the South African approach to water quality could not afford to rely only on interventions at operational level, or only on the strategic approach. He acknowledged the importance of implementation so as to

make a positive difference to the water resource. The Policy would be taken through the Economic Cluster and the parliamentary process with the ultimate aim of getting Cabinet approval. An important message of the project was that water is a developmental issue that affects the economy and society. The IWQM project would also be presented at a meeting of the Lower Orange River Forum in Upington in November to give stakeholders in that part of the province the opportunity to be informed and to comment.

Mr Weston noted that the purpose of the meeting was to:

- Create awareness regarding the WQM Policy and the IWQM Strategy
- Obtain comments and inputs into the WQM Policy and the IWQM Strategy
- Initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the water management areas
- Solicit initial inputs for the conversion of the IWQM Policy and the IWQM Strategy into practice
- Outline the way forward

## **BACKGROUND TO WATER QUALITY MANAGEMENT IN SOUTH AFRICA**

Mr Weston gave a presentation on the background to water quality management in South Africa.

South Africa is faced with many of the problems related to poor water quality; this may be attributed to the vast number of challenges we face with managing the various sources of pollution, including air pollution, agricultural drift and run-off, industrial wastewater discharges, urban run-off, and challenge with managing run-off from unserviced areas, mine water and sewage water.

Many factors contribute to the WQM challenges, including:

- Sources of water pollution are complex. There are varying sources of pollution (point source, diffuse) and water quality changes along the hydrological regime.
- Catchments are complex socio-economic systems, and some are shared watercourses: Sufficiently integrated and adaptive approaches within and across catchments should be implemented, which is currently lacking.
- Sufficient alignment and coordination is needed within and between government departments. WQM is hampered by poor coordination and conflicting approaches.
- There is insufficient finance for WQM. The available financial resources are insufficient and do not recognise the investment required to counteract economic harm.
- There is insufficient data and information management: Data sharing is a challenge, including transboundary-management. There is a challenge in ensuring that the public has access to information.
- There are capacity and skills constraints in the field of WQM

In response to the country's need to take an improved integrated approach to WQM, DWS has initiated a project to develop a national, integrated Water Quality Management (WQM) Strategy, but before the strategy could be developed the current WQM policies, which were needed in order to give direction to the strategy, would require revision. This is due to the fact that whilst innovative at the time of publication, the current policies (Water Quality Management Policies and Strategies in the RSA in 1991 and the 2006 Resource Directed Management of Water Quality Policy) are dated and not integrated, and need to be aligned with the current overarching policy and legislative frameworks, socio-economic trends and emerging global issues.

The contract for the project was signed on 4 October 2015 and would continue until September 2017. The project comprises five phases: Inception, Assessment, Policy, Strategy and Policy into Practice. The policy and strategy were being developed through an iterative process, whereby first editions of the policy and strategy would be sent out for comment, and would be amended in response to the comments received. The project was currently in the Strategy phase, which spanned from August 2016 until February 2017, which entailed revise, update & integrate existing WQM strategies based on inputs from Stakeholders & assessment phase

All documents produced were available on the DWS project website ([www.dws.gov.za/projects/iwqms](http://www.dws.gov.za/projects/iwqms)). The following documents had been completed to date:

- Inception Report

- Review of WQM Policies and Strategies
- Review of WQM Institutional Arrangements
- Review of WQM Instruments
- Note on the WQM Challenges
- Water Quality Glossary
- Capacity Building Strategy
- Stakeholder Communication Strategy
- Newsletters 1 and 2
- Note on the WQM Policy Principles
- WQM Policy (Edition 1)
- Note on the Strategic Framework

The identified water quality issues that need to be addressed through the WQM Policy and Strategy include: salinisation, nutrient enrichment and eutrophication, acidification and acid mine drainage, erosion and sedimentation, urban runoff pollution, litter and solid waste, microbial pollution, waterborne pathogens and human health, agrochemicals and toxic substances, dissolved oxygen and organic pollution, trace metals, hydrocarbon pollution, thermal pollution, nanoparticles and radioactivity.

There is already considerable knowledge and understanding of many of the priority water quality issues (e.g. eutrophication, salinisation) but many of the issues need more research (e.g. the impact of nanoparticles, metals, hydrocarbons and agrochemicals).

Impacts on water quality by industry, mining, municipalities, mining and urban wash-off were considered, and the following issues were identified:

- Municipalities: lack of maintenance of wastewater infrastructure, inappropriate technologies, 'unsexy' infrastructure, the need for financial incentives to attract industry, lack of enforcement, lack of ownership by affected communities, lack of appropriate bylaws, lack of adequate / appropriate urban planning, understanding of mandates is confused, capacity challenges, insufficient resourcing, labour challenges, poor budgeting/ not ring-fencing budgets, lack of political support, politically embarrassing, poor understanding of importance, unsustainable financial model, rapid urbanisation, supply trumps quality
- Industry: not meeting discharge standards in municipal environments, legacy water quality issues, wastewater treatment works (WWTW) technology inappropriate, municipalities treat industry as source of revenue, WWTW removes incentives to pre-treat, WDCA on hold, political pressure to attract industry, no incentives to treat, transfers responsibility to meet standards to local municipalities, lack of trust between industry and government, lack of enforcement, inappropriate licence conditions, lack of capacity, ineffective monitoring, limited communication, poor cooperative governance
- Agriculture: poor land use practices, over-irrigation, over-fertilisation, over-abstraction, varying contexts (e.g. small vs commercial, communal), extension services weak, poor enforcement, capacity challenges, dispersed spatial nature of agriculture, lack of financial resources, lack of accountability by both government and farmers, jobs trump environment and water quality, not understood to be a priority, poor cooperative governance
- Urban wash-off: degradation of wetlands, canalisation of rivers and the degradation of riparian areas and developments in floodplains; lack of maintenance of infrastructure; rapid growth in poorly serviced peri-urban dense settlements; lack of ownership by society; lack of enforcement and lack of bylaws; mindset of not needing to treat; lack of adequate / appropriate urban planning; understanding of mandates is confused; capacity challenges; insufficient resourcing, and spend requirements are huge; lack of political support; poor understanding of importance; rapid urbanisation; unsustainable financial model
- Mining: Existing mines not meeting water quality discharge standards; government facing significant challenges in managing impact of abandoned mines; uncertainty around mine closure funds and meeting new closure requirements; insufficient control monitoring and enforcement function at DWS (at national through to local level, also linked to capacity to implement, know-how to hold someone accountable and ability to write proper licence conditions); Weak technical capacity, with water quality officers not knowing how they fit in, inaccurate water use licences, not sure how to enforce, cannot read and interpret water data, lack of knowledge around protected areas or understanding what that really means; Political interference in establishment of mines

(e.g. unlicensed mines, establishment of mining in areas that are protected, competing mandates, short-term benefit overshadows long term sustainability); poor cooperative governance and mismatch in departmental mandates; insufficient financial resources

Future trends that with implications for water quality are anticipated to be: climate change, hydraulic fracturing, renewable energy, water–energy–food security nexus, growth of inadequately serviced densely populated settlements and water re-use.

A SWOT analysis identified 28 strengths, 62 weaknesses, 32 opportunities and 45 threats. The following priority actions are proposed in order to respond to the SWOT analysis:

- Promote integration of water quality and quantity
- Formalise cooperative governance structures, processes and resources for water quality regulatory actions
- Formally address overlaps of statutory/regulatory/oversight mandates that affect WQM
- Formalise institutional/legal framework for intervention in municipalities with failing water and sanitation functions
- Strategy and plan for sectoral partnerships and public–private partnerships
- Rolling engagement with DWS senior management on WQM
- Rolling public engagement on joint custodianship of the resource
- Intensify WQM capacity development across sectors
- Overhaul all aspects of water quality monitoring and data management
- Intensify all aspects of control monitoring and enforcement
- Mobilise ex-DWS budget funding of WQM initiatives.

In the international context, good quality water is the foundation for achieving the UN Sustainable Development Goals (SDGs) and further drives the need for an integrated WQM Policy and Strategy for South Africa, for example:

- Goal 1 & 2: No hunger – good water quality is required for the rural and agricultural sector for food production, which is a crucial step in poverty reduction
- Goal 6: Clean water and sanitation
- Goal 14: Life below water speaks to the health of our aquatic systems, which is fundamentally dependent on certain water quality requirements and is affected by changes in water quality.

The literature review of the international experience of WQM identified a number of trends:

#### Strategic alignment

- Water quality problems are increasingly shifting to non-point sources related to failing infrastructure
- Basin water quality rehabilitation and management is a long-term process requiring institutional capacity and financial sustainability, within broader water resources management
- Water resources crisis provides an opportunity to gain political will and momentum, but needs to be sustained
- Catchment WQM requires a combination of technical, regulatory, economic, financial and institutional interventions
- Influencing government financing mechanisms provides a critical means of enabling water quality action
- The SDG indicator process provides an opportunity to address water quality issues.

#### Coherent instruments

- Regulatory and strategic approaches are increasingly focusing on minimising pollution by being stringent on priority sectors
- Clean tech supported by green economy initiatives and financing mechanisms provides targeted ways of reducing pollution at source
- Coherent regulatory regimes and strategic institutional approaches supported by appropriate financial mechanisms and cooperative actions
- Natural (green) infrastructure is recognised as critical aspect of integrated management of water quality in urban and rural settings
- Various economic (and financial) approaches have been attempted, the selection of which should be depend on the individual context and may be targeted

- Good water quality monitoring enables enforcement and compliance, but this can be incrementally developed and funded.

#### Partnerships

- Government needs to play a lead role in driving, coordinating and often financing the remediation, and not always just water quality managers
- Building long-term partnerships is fundamental to sustained and effective local solutions
- Basin institutions lead catchment rehabilitation/protection, through a range of rural and urban measures
- Alignment and consistency is an emerging challenge that requires cooperative governance and regulatory/strategic approaches (vertical and horizontal)
- Private sector has a crucial role to play in minimising its impacts on water resources, and collaborating through water stewardship partnerships
- Civil society has a key role

#### **Discussion**

Rendani Ndou (DWS: Resource Protection and Waste) posed the question of how best to deal with stormwater management in urban areas. He commented that people in rural areas in the arid Northern Cape often drill boreholes to supply water to households for basic needs. This needs to be taken into account in the WQM policy and strategy.

Hendrik du Plessis (MISA TC) noted that the Northern Cape receives pollution from upstream in several rivers and asked about the extent to which the province can charge upstream provinces for the costs of the additional water treatment that is required.

Dr Johan van der Merwe (Modder Riet Catchment Management Forum & Bloem Water) commented that the integrated water resource management framework must include groundwater, which plays an important part in water supply in the Northern Cape.

Mr Peet van der Walt (Frances Baard District Municipality) recommended the need for an institutional body for water quality representing all stakeholders in order to deal with large-scale impacts on water quality, for example, fracking.

Hannes de Wet (Agri Northern Cape) commented that good water quality is particularly important for the table grape export industry in the Northern Cape, since exporters have to meet the quality standards of the countries to which they export. The quality standards of the EU, a major export partner, are particularly stringent.

#### **DEVELOPMENT OF THE IWQM STRATEGY**

Ms Reddy gave a presentation on the development of the IWQM Strategy.

A series of steps was followed in developing the WQM Policy and Strategy:

- Outcome 1: Consensus on prioritised water quality issues was preceded by a high-level description a prioritisation of water quality issues
- Outcome 2: Identification of WQM challenges and gaps was preceded by a root cause analysis, insights from a literature review and WQM SWOT analysis
- Outcome 3: Foundation for policy, strategy processes was preceded by the consolidation and way forward.

The core concept of the WQM Policy is that water quality affects the economy and society's well-being. Water quality is a developmental issue. DWS is the sector leader in WQM, but everyone has a role to play, and a joint approach between government departments, the private sector (through initiatives such as the Strategic Water Partners Network) and civil society forms the basis of tackling the water quality challenges facing the country.

The Policy is a collation of existing policies as they relate to WQM, with stakeholder inputs and a literature survey used to identify gaps. It draws on the 1991 Water Quality Management Policies and Strategies in the RSA, the 2006 Resource Directed Management of Water Quality Policy, the National

Development Plan, the National Water Act (NWA), the National Water Resource Strategy, the UN Sustainable Development Goals (Agenda 2063), current DWS policies and other departmental policies, including those of the DMR, DEA, DAFF and DRDLR. It was developed based on the information from the Assessment phase, inputs from the project committees, and importantly, inputs from stakeholder discussions. It strengthens existing policy, but also proposes several new positions, the largest being that WQM need to be an inter-governmental responsibility, with DWS as the sector leader. It is hoped that further consultations will strengthen the policy even more.

The aim of the WQM Policy is to:

- Elevate water quality and water quality management on the country's agenda.
- Formalise and institutionalise a common approach to water quality management in South Africa.
- Support a consistent inter-departmental approach to how water quality is managed in the country.
- Support cooperative and integrated approaches to water quality management across sectors.
- Address operational aspects such as taking an integrated approach, broadening finance mechanisms and improving knowledge and information in the execution of the water quality management function.
- Provide a framework to realise improvements in water quality in key systems.
- Guide the development of an IWQM Strategy.

The WQM principles, Policy and Strategy are aligned in the following way:

The principles establish the fundamental norms, rules, or values that represent what is desirable to the country in terms of WQM. Principles form the foundation on which the policy is developed.

The Policy provides the overall vision and framework for how water quality should be managed in South Africa for at least, the next two decades.

The Strategy describes the prioritised strategic actions that need to take place over a five year horizon to realise the WQM envisaged by the policy, together with the enabling environment.

The implementation plan describes, roles, responsibilities, timeframes and resource requirements to achieve the strategic actions.

The roll-out of the implementation plan involves monitoring and reporting on implementation performance and the effect the Policy and Strategy implementation has had on water resources.

1. The 15 policy principles developed in the initial phase were structured around the four areas of governance, economic and finance, operational, and data and information. Several of the policy principles were new in respect of their application to WQM, namely those that are underlined in the following list:

- Governance
  - Principle 1: Government-wide water quality management
  - Principle 2: Subsidiarity and accountability
  - Principle 3: Transboundary water quality management
  - Principle 4: Partnerships
  - Principle 5: Administrative fairness and implementability
  - Principle 6: Administrative penalties (administered by DWS, not through the justice system)
- Economic and finance
  - Principle 7: Water quality is a developmental issue
  - Principle 8: Broadened funding principles
  - Principle 9: Polluter pays
- Operational
  - Principle 10: An integrated and adaptive approach
  - Principle 11: Hierarchies of water use and pollution management decision-making
  - Principle 12: Green/ecological infrastructure restoration and rehabilitation
  - Principle 13: Risk-based approach
- Data and information
  - Principle 14: Collection and protection of data
  - Principle 15: Publicly available information

The Policy is divided into four chapters, each of which describes the problem/challenge that needs to be resolved through the policy; the response to mitigate the challenge; and the principles to be adopted in responding to the challenge. The four chapters are:

- Chapter A: Inclusive WQM for South Africa

- Chapter B: Integrated, adaptive water quality regulation and management
- Chapter C: Financing IWQM
- Chapter D: Building the knowledge and capacity base

**Chapter A: Inclusive WQM for South Africa** deals with the need to see/understand the impact of water quality on the socio-economic and ecological development in the country; the need for an intra- and inter-departmental response to the WQM challenges in the country; some of the key policy aspects that must be addressed in achieving such an approach; and the need to build partnerships between government departments, civil society and the private sector in order to be able to successfully address the challenges. It addresses principles 1, 2, 4 and 7.

**Chapter 2: Integrated, adaptive water quality regulation and management** spells out the nature of an integrated approach to adaptive WQM and key policy framings of the integrated approach to regulation and adaptive management of water quality, including integrated, adaptive catchment planning, following a risk-based approach; and applying a hierarchy approach to decision-making. It addresses principles 3, 4, 5, 10, 11, 12 and 13.

**Chapter 3: Financing IWQM** examines the financial underpinnings of IWQM, looking at tools for financing the required actions, as well as the role of the private sector in this regard. It addresses principles 4, 6, 8 and 9.

**Chapter 4: Building the knowledge and capacity base** describes the policy with regard to the knowledge, human resource capacity and information base requirements to be able to implement the policy approaches. It addressed principles 4, 14 and 15.

It is tempting to believe that it is possible to follow a straight line from setting to achieving the desired objective, but in the real world this is never straightforward and the context is uncertain. Adaptive management therefore becomes a critical part of the process, necessitating ongoing monitoring and evaluation, and the periodic revision of the strategy and implementation plans.

Global good practice has shifted away from setting strategic plans with objectives to be set in a linear way. Global best practice in the private sector places less emphasis on sticking to a strategic plan than on building a rich and engaging corporate purpose; focuses less on formal structural design and more on effective management processes; is less concerned with controlling employees' behaviour than with developing their capabilities and broadening their perspective; and moves beyond the doctrine of strategy, structure and systems to a more organic model built on the development of purpose, process and people.

The challenge is to ensure that the IWQM strategy also builds the capability of people and institutions to manage in an adaptive and proactive manner that responds in a constructive way to the changing environment.

The strategic intent of the Policy and Strategy:

- Is aligned with the strategic objectives of the policy, while being consistent with broader water and development strategies (National Development Plan, NWRS2)
- Is focused on a short term timeframe, while building a platform for future strategies in line with the policy and visions for water quality management
- Prioritises a limited number of critical concerns, while ensuring that other issues are addressed through ongoing management or monitoring for future prioritisation
- Is relevant at national, catchment and local scales, while ensuring horizontal alignment across sectors and institutions at each scale
- Guides the actions/activities to be described in the implementation plans on a short-term basis
- Allows for adaptive response to changing circumstances and achievements based on effective ongoing monitoring and evaluation, during its timeframe.

The vision for WQM in South Africa is that government, in partnership with the private sector and civil society secure good water quality for all, forever.

The mission is to:

- Support a consistent interdepartmental approach to how water quality is managed in the country

- Support cooperation and integrated approaches to WQM across sectors, including civil society
- Adopt an adaptive management approach in which co-creation and co-learning by key players is entrenched
- Realise improvements in water quality in key systems
- Start to build capacity for longer-term improvement in water quality.

The goals of the WQM Policy and Strategy are:

Goal 1: Improved alignment of Policy, Strategy and legislation

Goal 2: Improved governance

Goal 3: Improved, efficient and effective WQM

Goal 4: Innovative finance

Goal 5: Improved knowledge and information management.

The goals are designed to address various strategic issues:

Goal 1: Improved alignment of Policy, Strategy and legislation

- Strategic issue 1: Harmonise policies and strategies to enable improved integrated WQM
- Strategic issue 2: Legislative review and amendments to enable integrated WQM

Goal 2: Improved governance

- Strategic issue 3: Improve integrated WQM institutional structuring
- Strategic issue 4: Formalise governance frameworks to support non-governmental engagements

Goal 3: Improved, efficient and effective WQM

- Strategic issue 5: Improve coordinated integrated planning
- Strategic issue 6: Strengthen integrated WQM regulation, compliance and enforcement
- Strategic issue 7: Applications of systems-based adaptive management approaches

Goal 4: Innovative finance

- Strategic issue 8: Improve and sustain fiscal support for integrated WQM
- Strategic issue 9: Develop pricing and incentive systems that support integrated WQM

Goal 5: Improved knowledge and information management.

- Strategic issue 10: Strengthen monitoring and information management
- Strategic issue 11: Build water quality and WQM capacity through education, training and communication

Whilst there is a need to change our approach to WQM, it must be recognised that there is a well-conceived framework for WQM that needs to continue being implemented.

Implementation would involve:

- Fixing priority issues: This will provide the opportunity to realise success in addressing key issues and will embark on looking at rehabilitation or remediation in critical catchments. This will also entail looking at priority issues that can support the building of capacity and the on-going application of exiting instruments.
- Building capacity: Whilst it is understood that the capacity that the water sector requires will not be in place within the short term, in terms of skills, integrated information and systems, this is an important issue that needs to be driven immediately and continued over time in order to build adaptive management capacity. This also includes the development of cooperative partnerships across government, private sector and civil society.
- Maintaining and sustaining the system: The on-going processes that the DWS has in place will continue to be utilised to manage water quality across the country. These instruments and systems may require strengthening over time. This could involve exploring ways in which to improve and simplify some these instruments. This would include a drive to look at where instruments and systems can be integrated between departments in order to improve inter-departmental approaches.

## Discussion

Jurgo van Wyk (DWS Water Quality Planning: Central) observed that principles 8 and 9 apply in the situation in which the Northern Cape receives water quality impacts from Gauteng. The challenge is to give context to the policy statements.



## WORKSHOP 1: STRATEGIC ACTIONS: REVIEW AND PRIORITISATION

Workshop participants worked together in teams. The objectives were to:

- Review of the strategic action list and comment and add anything that they felt was missing in the table.
- List ten critical actions that need to be addressed in the province to address water quality and its management
- List three critical actions that need to be addressed nationally to address water quality and its management

Teams recorded their responses in the Strategic Actions Table (see Appendix 3).

## WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION

Workshop participants worked together in the same teams as for Workshop 1. The objectives were to answer the following questions for the ten provincial actions that they had prioritised in Workshop 1:

- What are the activities required to achieve these in the province?
- Who are the key actors and what roles do they play?
- How do we ensure implementation?

Teams recorded their responses in on flipcharts, which were typed up as Appendix 4.

## FEEDBACK DISCUSSION

Teams had the opportunity to provide feedback to the workshop (Appendix 3 and 4).

## WAY FORWARD

This was the third of the provincial roadshow workshops. A workshop was scheduled in each province as follows:

Eastern Cape	East London	12 October 2016
Free State	Bloemfontein	14 October 2016
Northern Cape	Kimberley	18 October 2016
North West	Rustenburg	21st October 2016
KwaZulu-Natal	Durban	25 October 2016
Gauteng	Pretoria	28 October 2016
Mpumalanga	Nelspruit	1st November 2016
Limpopo	Polokwane	4 November 2016
Western Cape	Cape Town	9 November 2016

The next steps in the process were as follows:


- Gazette Edition 1 of WQM Policy for comment and further revise the Policy to produce Edition 2 (final edition) based on further inputs from wider stakeholder groups (and the public) and the outcomes of the IWQM Strategy development process.
- Develop IWQM Strategy Edition 2 and Implementation Priorities based on inputs from provincial workshops, inputs from project committees and inputs from focused discussions with key stakeholder groups
- National Inter-Departmental Workshop, scheduled for November or December 2016
- National Symposium, scheduled for April 2017.

## CLOSURE

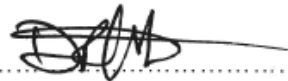
Jurgo van Wyk (DWS Water Quality Planning: Central) noted that some water quality issues with a bigger impact than can be addressed by the provincial office or CMA could be addressed through DWS Planning. Reconciliation strategies, based on the extensive use of models, have been successful from a water quantity perspective. Models could similarly be used to predict water quality impacts and take appropriate measures. DWS could get great value from increased impetus for water quality planning without the need for another institution. The outcome of the consultation process will

feed into legislative review and help inform DWS structures. He thanked the consultant team and all participants.

Gawie van Dyk concluded that the workshop had succeeded in its purpose of creating awareness of water quality, initiating understanding and outlining the way forward. He thanked everyone for their attendance and participation.

  
.....  
DWS Project Manager  
Pieter Viljoen  
Scientist Manager: Water Quality Planning

Date: ..... 29/01/2017 .....

  
.....  
PSP Team Leader  
Derek Weston  
Associate Director: Pegasys

Date: ..... 17/01/2017 .....

**APPENDIX 1: LIST OF ACRONYMS**

CMA	Catchment management agency
CMA	Catchment management agency
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DENC	Northern Cape Department Of. Environment & Nature. Conservation
DMR	Department of Mineral Resources
DRDLR	Department of Rural Development and Land Reform
DWS	Department of Water and Sanitation
EU	European Union
IDP	Independent Development Plan
IWQM	Integrated water quality management
NWRS	National Water Resource Strategy
O&M	Operation and maintenance
RQO	Resource quality objective
SALGA	South African Local Government Association
SDG	Sustainable Development Goal
SWOT	Strengths, weaknesses, opportunities, threats
UK	United Kingdom
UN	United Nations
WQM	Water quality management
WSDP	Water services development plan
WUA	Water user association
WWTW	Wastewater treatment works

**APPENDIX 2: COMMENTS FOR COMMENTS REGISTER**

<b>Comment from Northern Cape roadshow</b>	<b>Comment made by</b>
The Northern Cape receives pollution from upstream in several rivers. The province should be allowed to charge upstream provinces for the costs of the additional water treatment that is required.	Hendrik du Plessis (MISA TC)
The integrated water resource management framework must include groundwater	Dr Johan van der Merwe (Modder Riet Catchment Management Forum & Bloem Water)
An institutional body for water quality representing all stakeholders is needed in order to deal with large-scale impacts on water quality, for example, fracking.	Mr Peet van der Walt (Frances Baard District Municipality)
Government must be more assertive. Enforce penalties. Use funding mechanisms to penalise	Henri Coetzee (Kakamas Water User Association), Loewellyn van Wyk (Kakamas Water User Association), Hendrik du Plessis (MISA Renosterberg), Peet van der Walt (Frances Baard District Municipality)

### APPENDIX 3: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 1: STRATEGIC ACTIONS: REVIEW AND PRIORITISATION

T1: Henri Coetzee (Kakamas Water User Association), Loewellyn van Wyk (Kakamas Water User Association), Hendrik du Plessis (MISA Renosterberg), Peet van der Walt (Frances Baard District Municipality)

T2: Brenda van Zyl (Rockwell Diamonds), Jan Makhetha (DWS Kimberley), Peter Ramollo (Northern Cape Department of the Environment), Lucky Baloyi (DWS Northern Cape)

T3: Khutjo Sekwaila (DWS OPCMA), Terry Stoffel (Frances Baard District Municipality), Chamunorwa Moshakvanhu (MISA), Lizette Schön (Department Co-operative Governance, Human Settlements and Traditional Affairs), Rendani Ndou (DWS Resource Protection and Waste), Mmereki Mokgadi (DWS Kimberley Geohydro)

T4: L van As (Source Point), N Flemming (Source Point), Marizel van As (Department of Agriculture, Land Care), Stephan van Wyk (Petra Diamonds), Hannes de Wet (Agri Northern Cape)

T5: Bennie Viljoen (DWS Water Supply and Sanitation), Gawie van Dyk (DWS Free State), Dr Johan van der Merwe (Modder Riet Catchment Management Forum & Bloem Water), Kobus Streuders (DWS Water Supply and Sanitation), Henno Gericke

#### THE IWQM STRATEGIC OBJECTIVES

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
<b>Strategic Issue 1:</b> Harmonization of Policies and Strategic to enable improved WQM	<b>SO1 a:</b> Policies and Strategies impacting upon IWQM are harmonized	T1: Are municipal bylaws aligned with provincial/national policies? T3: Regional perspective should be included T4: Integration of the private and public sector awareness regarding the policies, strategies etc. T5: Too many conflicting policies and strategies	T3: X T5: X	
<b>STRATEGIC ISSUE 2:</b> Legislative review and amendments to enable integrated WQM	<b>SO2a:</b> NWA/WSA effectively support integrated WQM	T1: Are municipal bylaws aligned with provincial/national policies? T3: Interpretation guide to be clear – can have different interpretation on acts/legislation T4: More relevant RQO applications for all sectors based on baseline data T5: Water Services Act does not include/support IWQM	T2: X T3: X	
	<b>SO2b:</b> Other legislation effectively supports integrated WQM	T1: Agree. Studies must show who is the polluter T2: Wording: There should be other legislation in place to support integrated WQM T5: Not in mandate of other legislation. More effective		

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
		intergovernmental relations needed		
<b>STRATEGIC ISSUE 3:</b> Improved WQM institutional structuring	<b>SO3a:</b> DWS departmental structures support integrated WQM	T1: DWS needs to be more visible on the ground regarding WQM T2: Is still in process T3: Agreement. Alignment of structure from national to regional T4: Sharing information with all sectors. Sharing capacity between overlapping departmental projects	T3: X	T4: X T5: X
	<b>SO3b:</b> Inter-sector departmental structures established to support integrated WQM	T1: Results of studies must be communicated T4: Sharing information more effectively with public and private sectors as well as sharing capacity T5: Clarification of roles and responsibilities of different institutions. Need for overarching control/monitoring of process and/or body		T2: X T4: X T5: X
<b>STRATEGIC ISSUE 4:</b> Formalise governance frameworks to support non-governmental engagements	<b>SO4a:</b> Partnerships/stewardships established and maintained	T1: Public–private partnerships: what does experience tell us? T2: Be more specific about non-governmental in connection with WQM T3: Add “and other government departments” to Strategic Issue 4 (not only non-government) T4: This must be emphasised so as to ensure the sustainability of projects T5: Strategic Water Network was established. Better relations between NGOs, government and industry. Protection of municipalities versus prosecution if they transgress		T3: X T4: X T5: X
	<b>SO4b:</b> Governance framework for active citizenry formalized	T1: Agree		T4: X T5: X
<b>STRATEGIC ISSUE 5:</b> Improved coordination in integrated planning	<b>SO5a:</b> Integrated sectoral planning approach is adopted at transboundary and national level	T1: Experts must do studies and inform locals T4: Maintenance and supporting of catchment management forum T5: Investing/entering companies should be made aware of resource level. Integrated planning shortfall at regional level. Planning good at National level		
	<b>SO5b:</b> Integrated sectoral planning approach adopted in catchment/regional plans	T1: Agree T4: Actively including catchment management forums in solution finding T5: No distinct planning forums for water quality. RDP housing should consider water conservation. Water quality planning shortfall		T2: X T4: X

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
		in IDPs and WSDPs. Review IDPs		
<b>STRATEGIC ISSUE 6:</b> Strengthen IWQM Regulation, Compliance and Enforcement	<b>SO6a:</b> Licencing processes streamlined	T1: Agree. Important T2: Problem with capacity – not yet streamlined T3: Alignment of licensing process in the department. Add an objective for waste discharge charge system T4: Agree T5: Too comprehensive for only regional. National oversight/inputs required	T4: X	T3: X T5: X
	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	T1: Very important T2: Wording: Targeted/strengthened compliance monitoring and enforcement of potential polluting sectors/individuals/point pollutants T3: Add an objective to target unauthorised users in the enforcement of key polluting sectors T4: Not key – all sectors T5: Control monitoring and enforcement: focus on targets and not actions and monitoring. Required for fracking. Evaluation and monitoring and giving notices to polluters	T1: X T2: X T4: X	T1: X T2: X T5: X
<b>STRATEGIC ISSUE 7:</b> Application of Systems- based Adaptive Management Approaches	<b>SO7a:</b> Adaptive systems-based management is applied at catchment level	T1: Do not be too adaptive T3: Reword as: “Adaptive systems-based management is applied at catchment level, provincial and national”. Indicate clearly that systems are indicated on the objectives (strategic) T4: More active participation by CMAs and forums T5: Water quality objectives to be set. Lost ability to adapt quickly to changing water quality. Very little actual sampling and monitoring		
<b>STRATEGIC ISSUE 8:</b> Fiscal support for integrated WQM	<b>SO8a:</b> WQM interventions are financially supported by the fiscus	T1: Very important T2: Support must be on integrated system. Polluter pays T3: Also water users budgeting for impacts. Add: “Procurement of WQM tools and equipment is a challenge. Budget to be used for its intended purpose” T4: Strongly agree T5: Inadequate financial capacity. Polluter pays needs to be enforced	T1: X T4: X	T1: X

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
<b>STRATEGIC ISSUE 9:</b> Develop pricing and incentives that support integrated WQM	<b>SO9a:</b> The Waste Discharge Charge System is implemented	T1: Agree. Systems must be prioritised. Rivers more important T3: Ringfence charges collected for water quality issues T4: Management of non-point sources T5: Already encapsulated in law; enforcement is needed	T1: X	T1: X T3: X T4: X
	<b>SO9b:</b> Mechanisms for incentivising good practice developed	T1: Yes. Name and shame T4: Practical implementation plans must accompany good practices. This must be shared with all stakeholders T5: Systems were developed (BDS/GDS). Implementation/enforcement needed		T1: X T4: X
<b>STRATEGIC ISSUE 10:</b> Strengthen Monitoring and Information Management	<b>SO10a:</b> An integrated and functioning WQ monitoring network	T1: Do studies and show progress/deterioration T2: Huge challenge to collect and upload data on a monthly basis. Wording: Centralised and functioning water quality monitoring network on provincial level T3: Add: "Develop a national database that is interlinked with the provincial database. Gathering of information and use for decision-making T4: Very important. Collaboration between departments and private sector T5: Information lost from one partner to another. User friendliness of existing systems	T5: X	T1: X T3: X T4: X T5: X
	<b>SO10b:</b> Information systems that are current and accessible to support adaptive WQM	T1: Agree. Talk to councils; make one councillor responsible for water quality T4: Accessibility, practicality, user friendliness, predictability T5: Available but not user friendly. Private and public database for sector partners to submit their data publicly (like BDS/GDS for private sector)	T5: X	T2: X T4: X T5: X
	<b>SO10c:</b> Routine assessments inform adaptive WQM	T4: Credible T5: Timely publication of results needed. Capacity and financing to perform assessment. Too many assessments – Combined assessments?	T5: X	T4: X T5: X
<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education	T1: Continue. Personnel changes strengthen the water treatment occupation T4: Agreed. What kind of education will be focused on? How will it be maintained? How will the quality of the education be upheld?	T2: X T4: X T5: X	T2: X T3: X T5: X



STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
	and training	How will practical implementation of capacity be built? T5: Limited staff. Additional 'warm bodies' needed. Limited knowledge of Act prevents proper licensing by officials. Skills transfer from consultants		
	SO11b: WQM decisions are underpinned by best practice, research and innovation	T5: Decisions politically motivated – sometimes	T4: X	
	SO11c: A well informed and actively engaged South Africa	T2: Add: through awareness and campaigns T5: NGOs are already playing a role. Capacitate further	T4: X	

**General Comments:**

T1: Government must be more assertive. Enforce penalties. Use funding mechanisms to penalise

#### APPENDIX 4: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION

T1: Henri Coetzee (Kakamas Water User Association), Loewellyn van Wyk (Kakamas Water User Association), Hendrik du Plessis (MISA Renosterberg), Peet van der Walt (Frances Baard District Municipality)

	Strategic objective	Activities	Key actors
1	SO6b: Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	<ul style="list-style-type: none"> <li>Obtain personnel/training</li> <li>Supported by policies with specific penalties (e.g. name and shame/withhold funds)</li> <li>non-compliance: (1) Warn, (2) Do it on their behalf and recover cost from them (e.g. equitable share)</li> </ul>	
2	SO8a: WQM interventions are financially supported by the fiscus	<ul style="list-style-type: none"> <li>Non-compliance to be assisted/outsourced with funds from fiscus</li> <li>We disagree with SA39</li> </ul>	
3	SO9a: The Waste Discharge Charge System is implemented	<ul style="list-style-type: none"> <li>Only where discharge does not comply</li> <li>Depends if there are downstream users</li> </ul>	
4	SO9b: Mechanisms for incentivising good practice developed	<ul style="list-style-type: none"> <li>Publicise good performance</li> <li>Remunerate/fund a project of their choice</li> <li>Municipal graduate to do the work</li> </ul>	
5	SO10a: An integrated and functioning WQ monitoring network	<ul style="list-style-type: none"> <li>National and provincially driven</li> <li>Provincial champion must be appointed</li> </ul>	

T2: Brenda van Zyl (Rockwell Diamonds), Jan Makhetha (DWS Kimberley), Peter Ramollo (Northern Cape Department of the Environment), Lucky Baloyi (DWS Northern Cape)

	Strategic objective	Activities	Key actors
1	SO3b: Inter-sector departmental structures established to support integrated WQM	Establish intergovernmental WQM structures (forums and committees) at transboundary basin, national and joint action supported by regular supporting	
2	SO5b: Integrated sectoral planning approach adopted in catchment/regional plans	To appoint relevant staff in relevant positions	
3	SO6b: Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	DMR to also be involved in joint control monitoring and enforcement with DWS, DEA and CMAs	
4	SO10b: Information systems that are current and accessible to support adaptive WQM	DWS, CMAs, DEA, DMR and DAFF to develop a user-friendly system to enable data and information access by departments/shareholders/public	

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
5	SO11a: Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	Awareness must be at grassroots level and private civil society must be involved	

T3: Khutjo Sekwaila (DWS OPCMA), Terry Stoffel (Frances Baard District Municipality), Chamunorwa Moshakvanhu (MISA), Lizette Schön (Department Co-operative Governance, Human Settlements and Traditional Affairs), Rendani Ndou (DWS Resource Protection and Waste), Mmereki Mokgadi (DWS Kimberley Geohydro)

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
1	SO4a: Partnerships/stewardships established and maintained	Provincial engagement (stakeholders' commitment through workshops on WQM)	DWS, CMAs, Chamber of Mines, local government, DEA, DMR, WISA etc.
2	SO6a: Licencing processes streamlined	Increase capacity to eradicate backlog	
3	SO6b: Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	Finalisation and adoption of water use licence regulation Don't agree with risk-based protocol solution: develop regulation according to sector needs Interdepartmental monitoring and enforcement	DWS, DEA, DMR, water user associations, water user sectors, CMA
4	SO9a: The Waste Discharge Charge System is implemented	Finalise the charge rate and the Money Bill	DWS, National Treasury
5	STRATEGIC ISSUE 10: Strengthen Monitoring and Information Management	Active and reliable national database linked to provincial	DMR, DWS, DEA, Stats SA, SITA
6	STRATEGIC ISSUE 11: Build WQ and WQM capacity through education, training and communication	Recognise training needs and develop training materials. Skills audit leading to placing people in the right positions	DWS, ETDP SETA, service providers

T4: L van As (Source Point), N Flemming (Source Point), Marizel van As (Department of Agriculture, Land Care), Stephan van Wyk (Petra Diamonds), Hannes de Wet (Agri Northern Cape)

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
1	SO3b: Inter-sector departmental structures established to support integrated WQM	Sharing information and capacity between overlapping departmental, private & public, civil society sectors/projects	
2	SO4b: Governance framework for active citizenry formalized	Emphasis on practical sustainability, ownership, responsibility of project implementation	DWS, DEA, partners
3	SO5b: Integrated sectoral planning approach adopted in catchment/regional plans	CMAs to develop and IWQM plan for each water management area as part of the catchment management strategy	CMA, water user association, DWS
4	SO9b: Mechanisms for incentivising good practice developed	Quality-based guidelines (specific criteria) for the	DWS, CMA, water user association

	Strategic objective	Activities	Key actors
		implementation/assessment of good practices	
5	SO10b: Information systems that are current and accessible to support adaptive WQM	SA46–48	DWS, DEA, CMA, DAFF, “all relevant private and public sectors/stakeholders

T5: Bennie Viljoen (DWS Water Supply and Sanitation), Gawie van Dyk (DWS Free State), Dr Johan van der Merwe (Modder Riet Catchment Management Forum & Bloem Water), Kobus Streuders (DWS Water Supply and Sanitation), Henno Gericke

	Strategic objective	Activities	Key actors
1	Strategic Issue 3: Improved WQM institutional structuring	Improve IGR structures	Water Sector Stakeholders Department of Mineral Resources (DMR) DENC Irrigation Boards Weather SA WUA Water Boards District and Local Municipalities Provincial Government SALGA
		Overarching control and monitoring body – trans-boundary catchment institutions	ORASACOM, local and district municipalities, CMAs, Private-Public Partnerships
2	Strategic Issue 4: Formalize governance frameworks to support non-governmental engagements	<ul style="list-style-type: none"> <li>Capacity building of NGOs and water sector stakeholders.</li> <li>Acknowledge NGOs.</li> <li>Use of research / academic institutions.</li> </ul>	Community Forums, Water Forums, Water Management Forums, Academic Institutions.
3	Strategic Issue 6: Strengthen IWQM Regulation, Compliance and Enforcement: Licensing processes streamlined.	<ul style="list-style-type: none"> <li>Baseline monitoring done by applicant before application</li> <li>Enforce reporting</li> <li>Focus on non-compliances and rectification issues by water user / polluter.</li> </ul>	Applicant Water User  CMA, DWS
4	Strategic Issue 10: Strengthen Monitoring and Information Management	<ul style="list-style-type: none"> <li>Establish Integrated Water Quality Database for industry and public sector (National)</li> <li>Evaluation of water quality data to ensure fairness. (Provincial)</li> </ul>	DWS Industry  CMA
5	Strategic Issue 11: Build WQ and WQM Capacity through Education, Training and Communication	<ul style="list-style-type: none"> <li>Skills transfer between water sector stakeholders</li> </ul>	NGOs, Private / Public sector, DWS, Research

	Strategic objective	Activities	Key actors
		<ul style="list-style-type: none"> <li>Registration at professional bodies: SACNASP, ECSA</li> <li>Build capacity of NGOs and Communities and Individuals</li> </ul>	Councillors, Politicians



## DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS) - WP10978

### Implications of the WQM Policy and IWQM Strategy for Implementation

#### Regional Workshop: KwaZulu Natal

25<sup>th</sup> October 2016 | Coastlands Hotel, Durban | 09h00 – 15h45

### AGENDA

**Chairperson:** Ms. Doris Maumela

**Purpose of Meeting:**

- To create awareness regarding the WQM Policy and the IWQM Strategy;
- To obtain comments and inputs into the WQM Policy and the IWQM Strategy;
- To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;
- To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and
- To outline the way forward.

Item	Time	Topic	Responsible
	09h00 – 09h30	Arrival Tea and Coffee	
1	09h30 – 09h50	Welcome, Introductions and Purpose of the Meeting	Chair
2	09h50 – 10h30	Background to Water Quality Management in SA <ul style="list-style-type: none"><li>▪ <i>History, Issues and Challenges</i></li><li>▪ <i>Discussion on Regional Context</i></li></ul>	DWS Project Team
3	10h30 – 11h30	Development of the IWQM Strategy <ul style="list-style-type: none"><li>▪ <i>WQM Policy Responses</i></li><li>▪ <i>IWQM Strategic Responses</i></li><li>▪ <i>Discussion</i></li></ul>	Pegasys
4	11h30 – 12h45	<b>Workshop 1: Strategic Actions: Review and Prioritisation</b>	Facilitator: Pegasys
	12h45 - 13h30	Lunch	
5	13h30 – 14h45	<b>Workshop 2: Implications for Implementation</b>	Facilitator: Pegasys
7	14h45 – 15h10	Feedback Discussion	Pegasys
8	15h10 – 15h30	Way forward and Closure	Chair



**water & sanitation**  
 Department:  
 Water and Sanitation  
 REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF WATER AND SANITATION  
 DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS)  
 (WP10978)  
 MINUTES OF ROADSHOW WORKSHOP**

**Date:** 25 October 2016  
**Time:** 09:00–16:00  
**Venue:** Coastlands Hotel, Durban

**Present:**

Dr Mark Dent	Alliance for Water Stewardship
Rajiv Paladh	Bosch Capital
Nathaniel Padayachee	COGTA Municipal Infrastructure
Andre Evetts	COGTA: CE (Dir) Municipal Infrastructure
Michael Maluleke	DWS
Halalisiwe Mdletshe	DWS EO
Lwandle Sibango	DWS EO
Ntombethu (Zethu) Makwabasa	DWS EOC
Rikhotso Vongani	DWS Urban and Rural Water Management
Zama Masondo	DWS Urban and Rural Water Management
Geert Grobler	DWS Water Quality Planning
Pieter Viljoen	DWS Water Quality Planning
Jabu Sithole	DWS WR&U
Siyabonga Buthelezi	DWS/ PUCMA
Strinivasen Govender	DWS/PUCMA
Bernice Becker	DWS/PUCMA: IDS
Mkhungo Bhabha	DWS/PUCMA: IDS
Renelle Pillay	DWS/PUCMA: IWRP & IM
Vishnu Mabeer	Ethekwini WS/WISA
Dr Mark Bodley	Integrated Management Systems & Exova-BM TRADA
Dudu Vumase	Isiqalo Cooperative
Thembeke Mthuli	KwaDukuza Municipality
S la Marque	Kwanalu
Lungile Gumede	Liberty NPO
Paulos Gwalo	Ntuzuma Enviro Cooperative
PM Mkhwanzi	Ntuzuma Enviro Cooperative
Derek Weston	Pegasys
Traci Reddy	Pegasys
Robyn Arnold	Project team
M Govender	SASA
Siraj Paruk	Transnet National Ports Authority
Mlondi Ngcobo	Umgeni Water
Rod Bulman	Umsunduzi Catchment Management Forum
Thulani Mnyandu	Umzinyathi District Municipality

**WELCOME, INTRODUCTIONS AND PURPOSE OF THE MEETING**

Ms Renelle Pillay welcomed everyone on behalf of Mr Jay Reddy, head of the DWS PUCMA. She acknowledged the country-wide problems with water quality. The workshop was part of a process of developing tools to manage water quality better.

Mr Pieter Viljoen (DWS Planning and IWQMS project manager) noted that National Office was in the province in order to help. The Irrigation Act of 1919 was the first South African legislation on the management of water quality and quantity. The Irrigation Act required irrigation of waste on land, not into rivers. Green Drop reports show that the water quality problems dating back to 1919 still persist.

We cannot expect a different outcome by continuing to manage water resources in the same way. Over the years, the department has had many policies on managing water quality, but the situation is not improving. The purpose of the present project was to develop a departmental, interdepartmental and sectoral approach to WQM. Mr Viljoen allowed a round of introductions.

Mr Weston noted that the purpose of the meeting was to:

- Create awareness regarding the WQM Policy and the IWQM Strategy
- Obtain comments and inputs into the WQM Policy and the IWQM Strategy
- Initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the water management areas
- Solicit initial inputs for the conversion of the IWQM Policy and the IWQM Strategy into practice
- Outline the way forward

## **BACKGROUND TO WATER QUALITY MANAGEMENT IN SOUTH AFRICA**

Mr Weston gave a presentation on the background to water quality management in South Africa.

South Africa is faced with many of the problems related to poor water quality; this may be attributed to the vast number of challenges we face with managing the various sources of pollution, including air pollution, agricultural drift and run-off, industrial wastewater discharges, urban run-off, and challenge with managing run-off from unserved areas, mine water and sewage water.

Many factors contribute to the WQM challenges, including:

- Sources of water pollution are complex. There are varying sources of pollution (point source, diffuse) and water quality changes along the hydrological regime.
- Catchments are complex socio-economic systems, and some are shared watercourses: Sufficiently integrated and adaptive approaches within and across catchments should be implemented, which is currently lacking.
- Sufficient alignment and coordination is needed within and between government departments. WQM is hampered by poor coordination and conflicting approaches.
- There is insufficient finance for WQM. The available financial resources are insufficient and do not recognise the investment required to counteract economic harm.
- There is insufficient data and information management: Data sharing is a challenge, including transboundary-management. There is a challenge in ensuring that the public has access to information.
- There are capacity and skills constraints in the field of WQM

In response to the country's need to take an improved integrated approach to WQM, DWS has initiated a project to develop a national, integrated Water Quality Management (WQM) Strategy, but before the strategy could be developed the current WQM policies, which were needed in order to give direction to the strategy, would require revision. This is due to the fact that whilst innovative at the time of publication, the current policies (Water Quality Management Policies and Strategies in the RSA in 1991 and the 2006 Resource Directed Management of Water Quality Policy) are dated and not integrated, and need to be aligned with the current overarching policy and legislative frameworks, socio-economic trends and emerging global issues.

The contract for the project was signed on 4 October 2015 and would continue until September 2017. The project comprises five phases: Inception, Assessment, Policy, Strategy and Policy into Practice. The policy and strategy were being developed through an iterative process, whereby first editions of the policy and strategy would be sent out for comment, and would be amended in response to the comments received. The project was currently in the Strategy phase, which spanned from August 2016 until February 2017, which entailed revise, update & integrate existing WQM strategies based on inputs from Stakeholders & assessment phase

All documents produced were available on the DWS project website ([www.dws.gov.za/projects/iwqms](http://www.dws.gov.za/projects/iwqms)). The following documents had been completed to date:

- Inception Report
- Review of WQM Policies and Strategies
- Review of WQM Institutional Arrangements



- Review of WQM Instruments
- Note on the WQM Challenges
- Water Quality Glossary
- Capacity Building Strategy
- Stakeholder Communication Strategy
- Newsletters 1 and 2
- Note on the WQM Policy Principles
- WQM Policy (Edition 1)
- Note on the Strategic Framework

The identified water quality issues that need to be addressed through the WQM Policy and Strategy include: salinisation, nutrient enrichment and eutrophication, acidification and acid mine drainage, erosion and sedimentation, urban runoff pollution, litter and solid waste, microbial pollution, waterborne pathogens and human health, agrochemicals and toxic substances, dissolved oxygen and organic pollution, trace metals, hydrocarbon pollution, thermal pollution, nanoparticles and radioactivity.

There is already considerable knowledge and understanding of many of the priority water quality issues (e.g. eutrophication, salinisation) but many of the issues need more research (e.g. the impact of nanoparticles, metals, hydrocarbons and agrochemicals).

Impacts on water quality by industry, mining, municipalities, mining and urban wash-off were considered, and the following issues were identified:

- Municipalities: lack of maintenance of wastewater infrastructure, inappropriate technologies, 'unsexy' infrastructure, the need for financial incentives to attract industry, lack of enforcement, lack of ownership by affected communities, lack of appropriate bylaws, lack of adequate / appropriate urban planning, understanding of mandates is confused, capacity challenges, insufficient resourcing, labour challenges, poor budgeting/ not ring-fencing budgets, lack of political support, politically embarrassing, poor understanding of importance, unsustainable financial model, rapid urbanisation, supply trumps quality
- Industry: not meeting discharge standards in municipal environments, legacy water quality issues, wastewater treatment works (WWTW) technology inappropriate, municipalities treat industry as source of revenue, WWTW removes incentives to pre-treat, WDCA on hold, political pressure to attract industry, no incentives to treat, transfers responsibility to meet standards to local municipalities, lack of trust between industry and government, lack of enforcement, inappropriate licence conditions, lack of capacity, ineffective monitoring, limited communication, poor cooperative governance
- Agriculture: poor land use practices, over-irrigation, over-fertilisation, over-abstraction, varying contexts (e.g. small vs commercial, communal), extension services weak, poor enforcement, capacity challenges, dispersed spatial nature of agriculture, lack of financial resources, lack of accountability by both government and farmers, jobs trump environment and water quality, not understood to be a priority, poor cooperative governance
- Urban wash-off: degradation of wetlands, canalisation of rivers and the degradation of riparian areas and developments in floodplains; lack of maintenance of infrastructure; rapid growth in poorly serviced peri-urban dense settlements; lack of ownership by society; lack of enforcement and lack of bylaws; mindset of not needing to treat; lack of adequate / appropriate urban planning; understanding of mandates is confused; capacity challenges; insufficient resourcing, and spend requirements are huge; lack of political support; poor understanding of importance; rapid urbanisation; unsustainable financial model
- Mining: Existing mines not meeting water quality discharge standards; government facing significant challenges in managing impact of abandoned mines; uncertainty around mine closure funds and meeting new closure requirements; insufficient control monitoring and enforcement function at DWS (at national through to local level, also linked to capacity to implement, know-how to hold someone accountable and ability to write proper licence conditions); Weak technical capacity, with water quality officers not knowing how they fit in, inaccurate water use licences, not sure how to enforce, cannot read and interpret water data, lack of knowledge around protected areas or understanding what that really means; Political interference in establishment of mines (e.g. unlicensed mines, establishment of mining in areas that are protected, competing mandates,

short-term benefit overshadows long term sustainability); poor cooperative governance and mismatch in departmental mandates; insufficient financial resources

Future trends that with implications for water quality are anticipated to be: climate change, hydraulic fracturing, renewable energy, water–energy–food security nexus, growth of inadequately serviced densely populated settlements and water re-use.

A SWOT analysis identified 28 strengths, 62 weaknesses, 32 opportunities and 45 threats. The following priority actions are proposed in order to respond to the SWOT analysis:

- Promote integration of water quality and quantity
- Formalise cooperative governance structures, processes and resources for water quality regulatory actions
- Formally address overlaps of statutory/regulatory/oversight mandates that affect WQM
- Formalise institutional/legal framework for intervention in municipalities with failing water and sanitation functions
- Strategy and plan for sectoral partnerships and public–private partnerships
- Rolling engagement with DWS senior management on WQM
- Rolling public engagement on joint custodianship of the resource
- Intensify WQM capacity development across sectors
- Overhaul all aspects of water quality monitoring and data management
- Intensify all aspects of control monitoring and enforcement
- Mobilise ex-DWS budget funding of WQM initiatives.

In the international context, good quality water is the foundation for achieving the UN Sustainable Development Goals (SDGs) and further drives the need for an integrated WQM Policy and Strategy for South Africa, for example:

- Goal 1 & 2: No hunger – good water quality is required for the rural and agricultural sector for food production, which is a crucial step in poverty reduction
- Goal 6: Clean water and sanitation
- Goal 14: Life below water speaks to the health of our aquatic systems, which is fundamentally dependent on certain water quality requirements and is affected by changes in water quality.

The literature review of the international experience of WQM identified a number of trends:

#### Strategic alignment

- Water quality problems are increasingly shifting to non-point sources related to failing infrastructure
- Basin water quality rehabilitation and management is a long-term process requiring institutional capacity and financial sustainability, within broader water resources management
- Water resources crisis provides an opportunity to gain political will and momentum, but needs to be sustained
- Catchment WQM requires a combination of technical, regulatory, economic, financial and institutional interventions
- Influencing government financing mechanisms provides a critical means of enabling water quality action
- The SDG indicator process provides an opportunity to address water quality issues.

#### Coherent instruments

- Regulatory and strategic approaches are increasingly focusing on minimising pollution by being stringent on priority sectors
- Clean tech supported by green economy initiatives and financing mechanisms provides targeted ways of reducing pollution at source
- Coherent regulatory regimes and strategic institutional approaches supported by appropriate financial mechanisms and cooperative actions
- Natural (green) infrastructure is recognised as critical aspect of integrated management of water quality in urban and rural settings
- Various economic (and financial) approaches have been attempted, the selection of which should be depend on the individual context and may be targeted

- Good water quality monitoring enables enforcement and compliance, but this can be incrementally developed and funded.

#### Partnerships

- Government needs to play a lead role in driving, coordinating and often financing the remediation, and not always just water quality managers
- Building long-term partnerships is fundamental to sustained and effective local solutions
- Basin institutions lead catchment rehabilitation/protection, through a range of rural and urban measures
- Alignment and consistency is an emerging challenge that requires cooperative governance and regulatory/strategic approaches (vertical and horizontal)
- Private sector has a crucial role to play in minimising its impacts on water resources, and collaborating through water stewardship partnerships
- Civil society has a key role

#### **Discussion**

Dr Mark Dent (Alliance for Water Stewardship) observed that governments worldwide were acknowledging that they could not manage water quality alone and introducing water stewardship.

Mark Bodley (Integrated Management Systems & Exova-BM TRADA) asked about the way in which integration was conceived. Mr Weston responded that integration implied national interaction as well as local interaction over water through catchment management strategies and catchment management forums.

Rod Bulman (Umsunduzi Catchment Management Forum) noted with respect to mines that the presentation had focused on existing mining, but the potential impact of new mining, in new areas, using new technology needs to be taken into account (e.g. dune mining, which uses water and chases profit but not in a sustainable manner; fracking).

Mr Weston acknowledged the political pressure to extend the mining sector and create jobs.

Andre Evetts (COGTA: CE Municipal Infrastructure) commented that from the municipal perspective, the reality was that there were more weak WSAs than stronger ones in the province, and that the weak WSAs were mostly in the rural areas. Revenue is not in place for operation and maintenance (O&M). The indigent policies conflict with the user base. Maintenance is one of the biggest problems related to water quality and really needs to be highlighted. Education and funding around maintenance are priorities.

Rod Bulman (Umsunduzi Catchment Management Forum) asked in relation to the presentation on instruments whether the literature review had found any examples of behavioural mechanisms (e.g. comparable with the of the South African non-smoking campaign, which had succeeded in making it socially unacceptable to smoke in public). There is a need for change in individual mindsets.

Mr Weston responded that the approach had been rather to consider ways of incentivising good behaviour by encouraging people to do the right things for the right reasons. He commented that this approach relates to stewardship partnerships in which partners are expected to behave in a certain way and adhere to certain standards in order to participate.

Dr Mark Dent (Alliance for Water Stewardship) referred to the WEF annual report on global risk. In 2015 water topped the list, which had alerted the financial sector. The economic sector is considering two basic risk elements related to water (1) events (e.g. flood, sewage spill), and (2) resilience to deal with such events, which could translate into reduction in insurance. The world is becoming more transparent, posing a major consumer challenge to firms, which are no longer easily able to conceal lapses in their environmental practices, as date-stamped photo evidence can readily be circulated through the social media.

Mark Bodley (Integrated Management Systems & Exova-BM TRADA) observed that responsible care and accountability had been growing over the last two years and could be fairly easily monitored through a certification process (e.g. palm oil only from sustainable forests, no GMOs). The Forestry

Stewardship Council was one of the oldest examples of promoting responsible care, and it was working well. Mr Bodley had been involved in an audit of care programmes. A practical, affordable and sustainable application of monitoring could be for businesses to become involved in an international certification process.

Vishnu Mabeer (EtheKwini WSM/WISA) observed that the SDGs, African Ministers Council on Water and National Treasury factor in a holistic approach. EtheKwini was obtaining funding from the Rockefeller Foundation for a resilient city. That is another approach that could be considered.

Andre Evetts (COGTA: CE Municipal Infrastructure) commented:

- WQM is an O&M issue. There are norms for the allocations that should be approved by councils, namely 8% of the carrying value of all property, plant and equipment (PPE) should be budgeted annually for O&M in terms of National Treasury's circular no. 71. There are two associated issues: (1) firstly it needs to be questioned whether the norm is correct. The international view (e.g. World Economic Forum) is to recommend that such allocations should be based on current replacement cost, and (2) municipalities experience problems in meeting the norm. In KwaZulu-Natal, the average was less than 2% in 2015. Only one small rural municipality with very little infrastructure managed to meet the norm; the allocation in EtheKwini Metro was 6.7%. COGTA is driving water supply backlogs, but the older infrastructure is falling apart, many WWTWs are not functional and raw sewage is entering rivers.
- Another important necessity is to education of (1) decision makers at council level that approve budgets, and (2) getting expertise and providing mentorship to develop experience and know how to operate and maintain.
- Financial issues are another factor. Municipalities generally have to pay for O&M through their own revenue not grants. MIG does not provide for maintenance except for roads. There is no subsidy for O&M. Municipal revenues are under pressure from indigent support and lack of enforcement of credit control on those that are not indigent.

Paulos Gwalo (Ntuzuma Enviro Cooperative) commented that NGOs educate people in communities. His NGO, together with representatives of the municipality and DWS, had gone to see a crisis situation in a community. The municipality cannot address the problem as it does not have a plan to assist community. CMAs and forums are sometimes not empowered to assist.

Thulani Mnyanou (Umzinyathi District Municipality) observed that O&M is a challenge facing municipalities. The Department of Human Settlement's programme to construct houses puts further pressure on water services. A subsidy is required for O&M support. Another challenge is skills capacity to manage WWTW; rural municipalities do not attract graduates, as there is migration to urban areas, and need assistance from DWS.

Makwabasa Zethu (DWS EOC) noted that from the regulator's perspective, there are issues that can be addressed without a grant with revenue at hand, but there are difficulties in getting signed approval. For example, there is a WWTW that is dysfunctional as the order to buy grease was not signed. The process controller or general worker is trying to do what he has been taught but does not have the necessary equipment. The municipality lacks a technical manager or municipal manager. Contractors that could assist to fix faulty equipment are no longer prepared to do so as they have not been paid for previous work. Operators do not get the necessary support. Process operators do not see their supervisor for six months. There is a political and legislative protective cushion. When DWS tries to regulate, the municipality cites the Promotion of Administrative Justice Act.

Siraj Paruk (Transnet National Ports Authority) concurred on the issues raised related to maintenance. The ports and estuaries are ultimate recipients of poor water quality and feel the full impact. The water quality challenges as a result of management problems and the general challenges of waste management have a profound impact on tourism, the maritime economy, aquaculture and fishing, but this is generally ignored. He commented that in the presentation, microplastics and heavy metal contamination were categorised as low priority. The Ports Authority had done its own research and regarded these as a priorities, since this kind of contamination affects the ability to dredge harbours, which impact on maritime affairs and hence on the economy. The project needs to take this into consideration. Heavy metals also impact on the ecology and human health.

Dr Mark Dent (Alliance for Water Stewardship) supported the emphasis on integration. WQM is subject to the targets and KPAs of many individuals and institutions, and one would therefore expect the water resources to be well managed, but things break down between the particular and the bigger system.

## DEVELOPMENT OF THE IWQM STRATEGY

Ms Reddy gave a presentation on the development of the IWQM Strategy.

A series of steps was followed in developing the WQM Policy and Strategy:

- Outcome 1: Consensus on prioritised water quality issues was preceded by a high-level description a prioritisation of water quality issues
- Outcome 2: Identification of WQM challenges and gaps was preceded by a root cause analysis, insights from a literature review and WQM SWOT analysis
- Outcome 3: Foundation for policy, strategy processes was preceded by the consolidation and way forward.

The core concept of the WQM Policy is that water quality affects the economy and society's well-being. Water quality is a developmental issue. DWS is the sector leader in WQM, but everyone has a role to play, and a joint approach between government departments, the private sector (through initiatives such as the Strategic Water Partners Network) and civil society forms the basis of tackling the water quality challenges facing the country.

The Policy is a collation of existing policies as they relate to WQM, with stakeholder inputs and a literature survey used to identify gaps. It draws on the 1991 Water Quality Management Policies and Strategies in the RSA, the 2006 Resource Directed Management of Water Quality Policy, the National Development Plan, the National Water Act (NWA), the National Water Resource Strategy, the UN Sustainable Development Goals (Agenda 2063), current DWS policies and other departmental policies, including those of the DMR, DEA, DAFF and DRDLR. It was developed based on the information from the Assessment phase, inputs from the project committees, and importantly, inputs from stakeholder discussions. It strengthens existing policy, but also proposes several new positions, the largest being that WQM need to be an inter-governmental responsibility, with DWS as the sector leader. It is hoped that further consultations will strengthen the policy even more.

The aim of the WQM Policy is to:

- Elevate water quality and water quality management on the country's agenda.
- Formalise and institutionalise a common approach to water quality management in South Africa.
- Support a consistent inter-departmental approach to how water quality is managed in the country.
- Support cooperative and integrated approaches to water quality management across sectors.
- Address operational aspects such as taking an integrated approach, broadening finance mechanisms and improving knowledge and information in the execution of the water quality management function.
- Provide a framework to realise improvements in water quality in key systems.
- Guide the development of an IWQM Strategy.

The WQM principles, Policy and Strategy are aligned in the following way:

The principles establish the fundamental norms, rules, or values that represent what is desirable to the country in terms of WQM. Principles form the foundation on which the policy is developed.

The Policy provides the overall vision and framework for how water quality should be managed in South Africa for at least, the next two decades.

The Strategy describes the prioritised strategic actions that need to take place over a five year horizon to realise the WQM envisaged by the policy, together with the enabling environment.

The implementation plan describes, roles, responsibilities, timeframes and resource requirements to achieve the strategic actions.

The roll-out of the implementation plan involves monitoring and reporting on implementation performance and the effect the Policy and Strategy implementation has had on water resources.

The 15 policy principles developed in the initial phase were structured around the four areas of governance, economic and finance, operational, and data and information. Several of the policy

principles were new in respect of their application to WQM, namely those that are underlined in the following list:

- Governance
  - Principle 1: Government-wide water quality management
  - Principle 2: Subsidiarity and accountability
  - Principle 3: Transboundary water quality management
  - Principle 4: Partnerships
  - Principle 5: Administrative fairness and implementability
  - Principle 6: Administrative penalties (administered by DWS, not through the justice system)
- Economic and finance
  - Principle 7: Water quality is a developmental issue
  - Principle 8: Broadened funding principles
  - Principle 9: Polluter pays
- Operational
  - Principle 10: An integrated and adaptive approach
  - Principle 11: Hierarchies of water use and pollution management decision-making
  - Principle 12: Green/ecological infrastructure restoration and rehabilitation
  - Principle 13: Risk-based approach
- Data and information
  - Principle 14: Collection and protection of data
  - Principle 15: Publicly available information

The Policy is divided into four chapters, each of which describes the problem/challenge that needs to be resolved through the policy; the response to mitigate the challenge; and the principles to be adopted in responding to the challenge. The four chapters are:

- Chapter A: Inclusive WQM for South Africa
- Chapter B: Integrated, adaptive water quality regulation and management
- Chapter C: Financing IWQM
- Chapter D: Building the knowledge and capacity base

**Chapter A: Inclusive WQM for South Africa** deals with the need to see/understand the impact of water quality on the socio-economic and ecological development in the country; the need for an intra- and inter-departmental response to the WQM challenges in the country; some of the key policy aspects that must be addressed in achieving such an approach; and the need to build partnerships between government departments, civil society and the private sector in order to be able to successfully address the challenges. It addresses principles 1, 2, 4 and 7.

**Chapter 2: Integrated, adaptive water quality regulation and management** spells out the nature of an integrated approach to adaptive WQM and key policy framings of the integrated approach to regulation and adaptive management of water quality, including integrated, adaptive catchment planning, following a risk-based approach; and applying a hierarchy approach to decision-making. It addresses principles 3, 4, 5, 10, 11, 12 and 13.

**Chapter 3: Financing IWQM** examines the financial underpinnings of IWQM, looking at tools for financing the required actions, as well as the role of the private sector in this regard. It addresses principles 4, 6, 8 and 9.

**Chapter 4: Building the knowledge and capacity base** describes the policy with regard to the knowledge, human resource capacity and information base requirements to be able to implement the policy approaches. It addressed principles 4, 14 and 15.

It is tempting to believe that it is possible to follow a straight line from setting to achieving the desired objective, but in the real world this is never straightforward and the context is uncertain. Adaptive management therefore becomes a critical part of the process, necessitating ongoing monitoring and evaluation, and the periodic revision of the strategy and implementation plans.

Global good practice has shifted away from setting strategic plans with objectives to be set in a linear way. Global best practice in the private sector places less emphasis on sticking to a strategic plan than on building a rich and engaging corporate purpose; focuses less on formal structural design and

more on effective management processes; is less concerned with controlling employees' behaviour than with developing their capabilities and broadening their perspective; and moves beyond the doctrine of strategy, structure and systems to a more organic model built on the development of purpose, process and people.

The challenge is to ensure that the IWQM strategy also builds the capability of people and institutions to manage in an adaptive and proactive manner that responds in a constructive way to the changing environment.

The strategic intent of the Policy and Strategy:

- Is aligned with the strategic objectives of the policy, while being consistent with broader water and development strategies (National Development Plan, NWRS2)
- Is focused on a short term timeframe, while building a platform for future strategies in line with the policy and visions for water quality management
- Prioritises a limited number of critical concerns, while ensuring that other issues are addressed through ongoing management or monitoring for future prioritisation
- Is relevant at national, catchment and local scales, while ensuring horizontal alignment across sectors and institutions at each scale
- Guides the actions/activities to be described in the implementation plans on a short-term basis
- Allows for adaptive response to changing circumstances and achievements based on effective ongoing monitoring and evaluation, during its timeframe.

The vision for WQM in South Africa is that government, in partnership with the private sector and civil society secure good water quality for all, forever.

The mission is to:

- Support a consistent interdepartmental approach to how water quality is managed in the country
- Support cooperation and integrated approaches to WQM across sectors, including civil society
- Adopt an adaptive management approach in which co-creation and co-learning by key players is entrenched
- Realise improvements in water quality in key systems
- Start to build capacity for longer-term improvement in water quality.

The goals of the WQM Policy and Strategy are:

Goal 1: Improved alignment of Policy, Strategy and legislation

Goal 2: Improved governance

Goal 3: Improved, efficient and effective WQM

Goal 4: Innovative finance

Goal 5: Improved knowledge and information management.

The goals are designed to address various strategic issues:

Goal 1: Improved alignment of Policy, Strategy and legislation

- Strategic issue 1: Harmonise policies and strategies to enable improved integrated WQM
- Strategic issue 2: Legislative review and amendments to enable integrated WQM

Goal 2: Improved governance

- Strategic issue 3: Improve integrated WQM institutional structuring
- Strategic issue 4: Formalise governance frameworks to support non-governmental engagements

Goal 3: Improved, efficient and effective WQM

- Strategic issue 5: Improve coordinated integrated planning
- Strategic issue 6: Strengthen integrated WQM regulation, compliance and enforcement
- Strategic issue 7: Applications of systems-based adaptive management approaches

Goal 4: Innovative finance

- Strategic issue 8: Improve and sustain fiscal support for integrated WQM
- Strategic issue 9: Develop pricing and incentive systems that support integrated WQM

Goal 5: Improved knowledge and information management.

- Strategic issue 10: Strengthen monitoring and information management
- Strategic issue 11: Build water quality and WQM capacity through education, training and communication

Whilst there is a need to change our approach to WQM, it must be recognised that there is a well-conceived framework for WQM that needs to continue being implemented.

Implementation would involve:

- **Fixing priority issues:** This will provide the opportunity to realise success in addressing key issues and will embark on looking at rehabilitation or remediation in critical catchments. This will also entail looking at priority issues that can support the building of capacity and the on-going application of exiting instruments.
- **Building capacity:** Whilst it is understood that the capacity that the water sector requires will not be in place within the short term, in terms of skills, integrated information and systems, this is an important issue that needs to be driven immediately and continued over time in order to build adaptive management capacity. This also includes the development of cooperative partnerships across government, private sector and civil society.
- **Maintaining and sustaining the system:** The on-going processes that the DWS has in place will continue to be utilised to manage water quality across the country. These instruments and systems may require strengthening over time. This could involve exploring ways in which to improve and simplify some these instruments. This would include a drive to look at where instruments and systems can be integrated between departments in order to improve inter-departmental approaches.

## Discussion

Mr Viljoen (DWS Planning) observed that a common theme in the pleas with respect to O&M, and for officials to sign purchase orders, was that people are concerned about water quality and require that someone must do something, but it is necessary to identify who, what and when through performance plans and agreements in the interests of accountability. A common refrain is that 'Government must do something', but many of those present at the workshop are government officials. How can cooperative governance be facilitated through dialogue between the Department of Human Settlement, National Treasury and municipalities? It is important not only to consider the problems but how to solve them (e.g. community-based policing). Municipalities have difficulties recruiting engineers and operators, and working at a WWTW is not considered attractive. How can people become interested in a career in water treatment? If we know a rural municipality is struggling, might there be an opportunity to establish a partnership with a mine or industry in the area to help support the municipality, which would not represent privatisation of the operation of municipal infrastructure.

Dr Mark Dent related how he had found innovative ways of teaching a university first-year Geography module on sustainability and systems thinking to students. He had got students to play football in groups with cardboard cones over their eyes, creating the effect of tunnel vision. Their intuitive response had been to want to remove the cones so as to see the whole game. Similarly, the approach to WQM does not require managing the whole system but being aware of the whole system – and looking and thinking.

## WORKSHOP 1: STRATEGIC ACTIONS: REVIEW AND PRIORITISATION

Workshop participants worked together in teams. The objectives were to:

- Review of the strategic action list and comment and add anything that they felt was missing in the table.
- List ten critical actions that need to be addressed in the province to address water quality and its management
- List three critical actions that need to be addressed nationally to address water quality and its management

Teams recorded their responses in the Strategic Actions Table (see Appendix 3).

## WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION

Workshop participants worked together in the same teams as for Workshop 1. The objectives were to answer the following questions for the ten provincial actions that they had prioritised in Workshop 1:

- What are the activities required to achieve these in the province?
- Who are the key actors and what roles do they play?



- How do we ensure implementation?

Teams recorded their responses in on flipcharts, which were typed up as Appendix 4.

## FEEDBACK DISCUSSION

Teams had the opportunity to provide feedback to the workshop (Appendix 3 and 4).

## WAY FORWARD

This was the fourth of the provincial roadshow workshops. A workshop was scheduled in each province.

The next steps in the process were as follows:


- Gazette Edition 1 of WQM Policy for comment and further revise the Policy to produce Edition 2 (final edition) based on further inputs from wider stakeholder groups (and the public) and the outcomes of the IWQM Strategy development process.
- Develop IWQM Strategy Edition 2 and Implementation Priorities based on inputs from provincial workshops, inputs from project committees and inputs from focused discussions with key stakeholder groups
- National Inter-Departmental Workshop, scheduled for November or December 2016
- National Symposium, scheduled for April 2017.

## CLOSURE

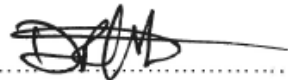
Rod Bulman (Umsunduzi Catchment Management Forum) thanked DWS for the workshop and supported the approach of the project. He asked whether the content could be shared with other stakeholders. Mr Viljoen welcomed this. DWS had prepared a presentation on the project that could be shared and presented at forums to create awareness. Edition 1 of the Policy and Strategy would be publicly available on the project website. The workshops were not considered public participation, but workshops to which particular stakeholders were invited.

Mr Viljoen thanked Renelle Pillay and the proto-CMA for assistance with arrangements for the workshop. The Implementation Phase of the project would follow after strategy development. Edition 2 of the Strategy would be circulated to workshop attendees by email, and they were encouraged to comment. Mr Viljoen thanked the consultant team and all participants for their valuable input.

The workshop closed at 16:00.

  
 .....  
 DWS Project Manager  
 Pieter Viljoen  
 Scientist Manager: Water Quality Planning

Date: 25/01/2017

  
 .....  
 PSP Team Leader  
 Derek Weston  
 Associate Director: Pegasys

Date: 17/01/2017

**APPENDIX 1: LIST OF ACRONYMS**

CMA	Catchment management authority
CME	Control monitoring and enforcement
COGTA	Department of Cooperative Governance and Traditional Affairs
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
DRDLR	Department of Rural Development and Land Reform
DWS	Department of Water and Sanitation
IDP	Integrated Development Plan
IWQM	Integrated water quality management
NGO	Non-governmental organisation
NWA	National Water Act
NWRS	National Water Resource Strategy
O&M	Operations and maintenance
PUCMA	Pongola-Umzimkulu Catchment Management Agency
RQO	Resource quality objective
SAPS	South African Police Service
SDG	Sustainable Development Goal
SWOT	Strengths, weaknesses, opportunities, threats
UK	United Kingdom
UN	United Nations
WISA	Water Institute of Southern Africa
WQM	Water quality management
WRC	Water Research Commission
WSA	Water services authority
WUL	Water use licence
WULA	Water use licence applications
WWTW	Wastewater treatment works

**APPENDIX 2: COMMENTS FOR THE COMMENTS REGISTER**

<b>Comment from KwaZulu-Natal roadshow</b>	<b>Comment made by</b>
Governments worldwide are acknowledging that they could not manage water quality alone and introducing water stewardship	Dr Mark Dent (Alliance for Water Stewardship)
The Strategy focuses on existing mining, but the potential impact of new mining, in new areas, using new technology needs to be taken into account (e.g. dune mining, fracking).	Rod Bulman (Umsunduzi Catchment Management Forum)
Revenue is not in place for operation and maintenance (O&M). The indigent policies conflict with the user base. Maintenance is one of the biggest problems related to water quality and needs to be highlighted. Education and funding around maintenance are priorities.	Andre Evetts (COGTA: CE Municipal Infrastructure)
There is a need for change in individual mindsets (e.g. comparable with the of the South African non-smoking campaign, which had succeeded in making it socially unacceptable to smoke in public).	Rod Bulman (Umsunduzi Catchment Management Forum)
A practical, affordable and sustainable application of monitoring could be for businesses to become involved in an international certification process.	Mark Bodley (IM Systems & Exova BmTRADA)
Funding from the Rockefeller Foundation for a resilient city is another approach that could be considered (e.g. as in Ethekewini)	Vishnu Mabeer (Ethekewini WS/WISA)
WQM is an O&M issue. There are norms for the allocations that should be approved by councils, namely 8% of the carrying value of all property, plant and equipment (PPE) should be budgeted annually for O&M in terms of National Treasury's circular no. 71. There are two associated issues: (1) firstly it needs to be questioned whether the norm is correct. The international view (e.g. World Economic Forum) is to recommend that such allocations should be based on current replacement cost, and (2) municipalities experience problems in meeting the norm.	Andre Evetts (COGTA: CE Municipal Infrastructure)
An important necessity is education of (1) decision makers at council level that approve budgets, and (2) getting expertise and providing mentorship to develop experience and know how to operate and maintain.	Andre Evetts (COGTA: CE Municipal Infrastructure)
Funding is needed for O&M. Municipalities generally have to pay for O&M through their own revenue not grants. MIG does not provide for maintenance except for roads. There is no subsidy for O&M. Municipal revenues are under pressure from indigent support and lack of enforcement of credit control on those that are not indigent.	
	Andre Evetts (COGTA: CE Municipal Infrastructure)
The Department of Human Settlement's programme to construct houses puts pressure on water services.	Thulani Mnyanou (Umzinyathi District Municipality)
When DWS tries to regulate municipalities, the municipality cites the Promotion of Administrative Justice Act.	Makwabasa Zethu (DWS EOC)
Water quality challenges as a result of management problems and the general challenges of waste management have a profound negative impact on tourism, the maritime economy, aquaculture and fishing, but this is generally ignored.	Siraj Paruk(Transnet National Ports Authority)
In the Strategy, microplastics and heavy metal	Siraj Paruk(Transnet National Ports

contamination were categorise as low priority. Research by the Ports Authority showed these to be high priorities, since this kind of contamination affects the ability to dredge harbours, which impact on maritime affairs and hence on the economy. The project needs to take this into consideration. Heavy metals also impact on the ecology and human health.	Authority)
Strategic issue of operations and maintenance is not included. We need to be clear on how the objectives will be achieved. We also need to be clear on who will do it. How will actions be funded given the funding constraints? Strategic actions to be better defined.	Rajiv Paladh (Bosch Capital), Zama Masondo (DWS Urban and Rural Water Management), Rikhotso Vongani (DWS Urban and Rural Water Management), Rajiv Paladh (Bosch Capital), S la Marque (Kwanalu), M Govender (SASA)
<p>Add to the Strategy:</p> <ul style="list-style-type: none"> <li>• Stakeholder identification and their roles in the strategy</li> <li>• Champions to be selected from each sector to help in the implementation plans (mining, WSA, government, DWS, DMR etc.)</li> <li>• Link the CME role to South Africa SAPS or authority with power for implementation to increase the authority and power by the authority</li> <li>• Language should be considered in addressing the issues above.</li> <li>• Intensify stakeholder engagement</li> <li>• Initiate youth prizes on water quality</li> <li>• Mobilise the sports fraternity to champion WQM awareness</li> <li>• Reimburse historically disadvantaged individuals (HDIs) who attend stakeholder empowerment sessions</li> <li>• Take to task sectors that do not comply</li> </ul>	Thulani Mnyandu (Umzinyathi District Municipality), Mkhungo Bhabha (DWS/PUCMA: IDS), Mlondi Ngcobo (Umgeni Water), Michael Maluleke (DWS), Paulos Gwalo (Ntuzuma Enviro Cooperative), Thembeke Mthuli (KwaDukuza Municipality)

### APPENDIX 3: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 1 – STRATEGIC ACTIONS: REVIEW AND PRIORITISATION

T1: Rajiv Paladh (Bosch Capital), Zama Masondo (DWS Urban and Rural Water Management), Rikhotso Vongani (DWS Urban and Rural Water Management), Rajiv Paladh (Bosch Capital), S la Marque (Kwanalu), M Govender (SASA)

T2: Strinivasen Govender (DWS/PUCMA), Mark Bodley (Integrated Management Systems & Exova-BM TRADA), Renelle Pillay (DWS/PUCMA: IWRP & IM), Dr Mark Dent (Alliance for Water Stewardship), Rod Bulman (Umsunduzi Catchment Management Forum), Andre Evetts (COGTA: CE Municipal Infrastructure)

T3: Dudu Vumase (Isiqalo Cooperative), Jabu Sithole (DWS WR&U), Nathaniel Padayachee (COGTA Municipal Infrastructure), Siraj Paruk (Transnet National Ports Authority), Bernice Becker (DWS/PUCMA: IDS)

T4: Thulani Mnyandu (Umzinyathi District Municipality), Mkhungo Bhabha (DWS/PUCMA: IDS), Mlondi Ngcobo (Umgeni Water), Michael Maluleke (DWS), Paulos Gwalo (Ntuzuma Enviro Cooperative), Thembeke Mthuli (KwaDukuza Municipality)

#### THE IWQM STRATEGIC OBJECTIVES

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
<b>Strategic Issue 1:</b> Harmonization of Policies and Strategic to enable improved WQM	<b>SO1 a:</b> Policies and Strategies impacting upon IWQM are harmonized	T1: How and when will it be aligned with/influence other policies? T2: Is it applicable? We are saying it must be applicable nationally T3: SO1 a: Policies and Strategies impacting upon IWQM are harmonized aligned T4: The challenge is the implementation of the policies though they are amended (WQM plans for every industry) Intersectoral link with affected and impacted sectors in terms of water quality (synergies)	T1: X	
<b>STRATEGIC ISSUE 2:</b> Legislative review and amendments to enable integrated WQM	<b>SO2a:</b> NWA/WSA effectively support integrated WQM	T1: Consider combining with SO1a as these are similar T2: The legislative reform will not solve integration T3: Primary legislation; also secondary legislation, as page 9 of the discussion document T4: WSAs develop and implement WQM plans (compulsory)	T1: X T3: X	T3: XX
	<b>SO2b:</b> Other legislation effectively supports integrated WQM	T2: Agree T3: Agreed The misalignment of legislation, for example, the Mineral Resources Act; Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies (Act 30 of 1947) T4: Law enforcement involvement in implementation of bylaws		

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
<b>STRATEGIC ISSUE 3:</b> Improved WQM institutional structuring	<b>SO3a:</b> DWS departmental structures support integrated WQM	T2: Include CMAs T3: No, undercapacitated. Lack of staff and budget (resources) to support monitoring and education. Lack of succession planning and skills transfer T4: Intensify support to CMAs and local structural platforms. Catchment management strategies are biased to water quantity management	T2: X	T2: XX
	<b>SO3b:</b> Inter-sector departmental structures established to support integrated WQM	T2: Strengthen structures to enable interactive water space T3: Severe lack of inter-sector department structures. Agreed T4: Establishment of personnel courses (RPC) to ensure skills are transferred	T2: X	T2: XX T4: XX
<b>STRATEGIC ISSUE 4:</b> Formalise governance frameworks to support non-governmental engagements	<b>SO4a:</b> Partnerships/stewardships established and maintained	T1: Be specific on citizens T3: Agreed, critical. DWS needs to take up the mantle and establish these partnerships/stewardships ASAP. Terms of reference and mandate to be agreed by the roleplayers T4: The non-governmental engagement needs to be dealt with based on the categories, and addressed. Mobilisation of academia to participate in the formalisation and review of Strategy Reading level of community to be addressed		T2: XX T3: XX
	<b>SO4b:</b> Governance framework for active citizenry formalized	T3: Citizens have not been informed of these engagements properly T4: Comprehensive and thorough stakeholder consultation towards development of the Strategy		T2: XX T4: XX
	<b>SO4c:</b> Move towards co-management (added by T2)			
<b>STRATEGIC ISSUE 5:</b> Improved coordination in integrated planning	<b>SO5a:</b> Integrated sectoral planning approach is adopted at transboundary and national level	T2: Should read: Integrated multi-stakeholder planning approach is adopted at transboundary and national level		T1: XX
	<b>SO5b:</b> Integrated sectoral planning approach adopted in catchment/regional plans	T2: Should read: Integrated multi-stakeholder planning approach adopted in catchment/regional plans T3: Agree. Alignment of strategic planning documents (Water Services Development Plans, Water Master Plans, IDPs) T4: Establish internal and external platform of engagements		

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
<b>STRATEGIC ISSUE 6:</b> Strengthen IWQM Regulation, Compliance and Enforcement	<b>SO6a:</b> Licencing processes streamlined	T1: We strongly agree with this point T3: Agreed, process needs to be streamlined	T1: X T3: X	T1: XX T2: XX
	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	T2: Resource quality objectives should be aspirational rather than just accepting the status quo T3: Integrated monitoring and enforcement amongst all organs of state. Clear roles and responsibilities of all enforcement authorities. Sector leader (DWS) to coordinate review, amend and gazette municipal bylaws T4: CME compliance notices should be linked to national legislation and the bylaws of municipalities DWS and WSA need to be empowered to deal with offenders in a better way Law enforcement is involved in enforcing municipal bylaws	T4: X	T2: XX T4: XX
	<b>SO6c:</b> Compliance, monitoring and certification increasing transparency (added by T2)			T2: XX
<b>STRATEGIC ISSUE 7:</b> Application of Systems-based Adaptive Management Approaches	<b>SO7a:</b> Adaptive systems-based management is applied at catchment level	T2: Should read: Adaptive systems-based management is applied at <u>all</u> catchment levels		T3: XX
	<b>SO7b:</b> Climate change adaptation is incorporated. Resilience to drought, flooding and disaster management related issues (catastrophe) (added by T3)			
<b>STRATEGIC ISSUE 8:</b> Fiscal support for integrated WQM	<b>SO8a:</b> WQM interventions are financially supported by the fiscus	T1: These exist. Be careful of creating an over-reliance on the national fiscus T2: Should read: <u>Adaptive</u> WQM interventions are financially supported by the fiscus <u>with a focus on an integrated approach</u> T3: Clear allocation of funding and associated functions T4: Required nationally and provincially Support existing structures (e.g. CMAs)	T3: X T4: X	T1: XX
<b>STRATEGIC ISSUE 9:</b> Develop pricing and incentives that support	<b>SO9a:</b> The Waste Discharge Charge System is implemented	T3: To work in conjunction with municipal bylaws Internal alignment of the Waste Discharge Charge System for effective enforcement		T1: XX

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
integrated WQM	<b>SO9b:</b> Mechanisms for incentivising good practice developed	T1: Revise existing incentive systems such as the Green Drop and Blue Drop T2: Should read: Mechanisms for incentivising good practice developed <u>with emphasis on transparency</u> T3: Agreed. Feasibility for incentivising recycling and desalination, and alternative sources of water T4: Intensify the current incentives (e.g. Green Drop, Blue Drop) Reward good practice (e.g. national water quality awards)		
<b>STRATEGIC ISSUE 10:</b> Strengthen Monitoring and Information Management	<b>SO10a:</b> An integrated and functioning WQ monitoring network	T3: Agreed T4: Establishment of central database by sector leader, or ensure databases talk to each other Sector leader should address the issues around data and information ownership	T2: X	T2: XX
	<b>SO10b:</b> Information systems that are current and accessible to support adaptive WQM	T1: Use some systems that are already existing e.g. National Integrated Water Information System (NIWIS) etc. T2: Should read: Information systems that are current, <u>credible</u> and accessible to support adaptive WQM <u>based on verified data/social robust information/actionable information</u> T3: Agreed	T2: X	T4: XX
	<b>SO10c:</b> Routine assessments inform adaptive WQM	T3: Agreed	T2: X	
	<b>SO10d:</b> Establish a robust science citizen monitoring network (added by T2)		T2: X	
	<b>SO10d:</b> Feed into CME (feed into 6a) (added by T3)			
<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity <u>with different stakeholders</u> through Education, Training and Communication <u>and the media (added by T4)</u>	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	T1: Institutionalisation of knowledge is important to ensure that knowledge remains after people leave. Develop PPL within the municipality T2: Sustained capacity for all stakeholders in the water space to effectively manage and support WQM through improved education and training T4: Catchment management forums (Finances) to support decisions taken	T1: X T2: X T4: X	T1: XX T2: XX T3: XX



STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
		Address language barriers Target base education, stakeholders, language, water management communication and marketing <u>planning</u> Skills transfer with different organisations and capacity, including universities and consultants. Hand-over plans and guidelines to be priorities (e.g. for monitoring)		
	<b>SO11b:</b> WQM decisions are underpinned by best practice, research and innovation	<b>T3:</b> Should read: WQM decisions are underpinned by best practice, research, innovation <u>and development</u>	<b>T2:</b> X	
	<b>SO11c:</b> A well informed and actively engaged South Africa	<b>T2:</b> A well-informed and actively engaged South Africa <u>through responsible water care, education and involvement</u> <b>T4:</b> A well-informed and actively engaged South Africa through responsible water care, education and involvement and provincially at local level Marketing and communication strategy and visibility (e.g. around the drought)	<b>T2:</b> X	<b>T4:</b> XX
	<b>SO11d:</b> Stakeholder identification and their involvement in the strategy and champions to be the leaders in the implementation and on ward level <b>(added by T4)</b>			
<b>STRATEGIC ISSUE 12:</b> Develop a strategic approach to effective operation and adequate planned maintenance <b>(added by T2)</b>	<b>SO12a:</b> Sustained planning for maintenance and operation of existing infrastructure			
	<b>SO12b:</b> Integrated and adaptive planning for new infrastructure developments			
	<b>SO12c:</b> Adequate resources for operation and maintenance			
<b>STRATEGIC ISSUE 12:</b> Resource conservation <b>(added by T3)</b>	<b>SO12a:</b> Reduction of water losses (e.g. pipeline maintenance, alien plant removal, illegal abstractions)			<b>T3:</b> XX

General Comments:

T1: Strategic issue of operations and maintenance is not included. We need to be clear on how the objectives will be achieved. We also need to be clear on who will do it. How will actions be funded given the funding constraints? Strategic actions to be better defined.

T4:

- Stakeholder identification and their roles in the strategy
- Champions to be selected from each sector to help in the implementation plans (mining, WSA, government, DWS, DMR etc.)
- Link the CME role to South Africa SAPS or authority with power for implementation to increase the authority and power by the authority
- Language should be considered in addressing the issues above.
- Intensify stakeholder engagement
- Initiate youth prizes on water quality
- Mobilise the sports fraternity to champion WQM awareness
- Reimburse historically disadvantaged individuals (HDIs) who attend stakeholder empowerment sessions
- Take to task sectors that do not comply

## APPENDIX 4: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION

T2: Strinivasen Govender (DWS/PUCMA), Mark Bodley (Integrated Management Systems & Exova-BM TRADA), Renelle Pillay (DWS/PUCMA: IWRP & IM), Dr Mark Dent (Alliance for Water Stewardship), Rod Bulman (Umsunduzi Catchment Management Forum), Andre Evetts (COGTA: CE Municipal Infrastructure)

	Strategic issue/objective	Activities	Key actors
1	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	<ul style="list-style-type: none"> <li>Enforcement of water use licence conditions</li> <li>Increase capacity of CME unit, including legal representation</li> <li>Voluntary disclosure by companies of their responsible water management statistics</li> <li>Similar concept to Green Drop should be introduced to mines and industries</li> <li>Emergency fund for pollution incidents</li> </ul>	
2	<b>STRATEGIC ISSUE 10:</b> Strengthen Monitoring and Information Management	<ul style="list-style-type: none"> <li>Review the current ICT systems to enhance communication internally and externally with respect to WQM</li> <li>Optimise data collection and analysis mechanisms in an integrated system for all strategic objectives</li> </ul>	
3	<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<ul style="list-style-type: none"> <li>Rejuvenate WQM training</li> <li>Investigate the feasibility of online training and education at various levels, for all stakeholders</li> <li>Regular engagement between DWS and tertiary institutions to ensure alignment between research and developmental objectives</li> </ul>	
4	<b>STRATEGIC ISSUE 3:</b> Improved WQM institutional structuring	<ul style="list-style-type: none"> <li>Operationalise structures that give a voice to people on the ground (e.g. catchment management forums)</li> <li>Fast track CMA operationalisation by insisting that all requests from stakeholders must go straight to CMA. Protocol must be</li> </ul>	

	Strategic issue/objective	Activities	Key actors
		<p>followed (e.g. licences going straight to Minister currently)</p> <ul style="list-style-type: none"> <li>• Create a platform for different directorates within DWS to engage</li> <li>• Misalignment of structures between national and regional level</li> <li>• Creation of water resource protection and technical committees at district level</li> </ul>	
5	<b>STRATEGIC ISSUE 4:</b> Formalise governance frameworks to support non-governmental engagements	<ul style="list-style-type: none"> <li>• Ensure water stewardship philosophy is followed in CMA</li> <li>• Development and implementation of the framework for citizen science and participation</li> </ul>	

T3: Dudu Vumase (Isiqalo Cooperative), Jabu Sithole (DWS WR&U), Nathaniel Padayachee (COGTA Municipal Infrastructure), Siraj Paruk (Transnet National Ports Authority), Bernice Becker (DWS/PUCMA: IDS)

	Strategic objective	Activities	Key actors
1	<b>SO2a:</b> NWA/WSA effectively support integrated WQM	<ul style="list-style-type: none"> <li>• Active participation in legislative developments</li> <li>• Develop guidelines for the areas that require further regulation</li> </ul>	Regional DWS, province, water boards, WSAs, COGTA
2	<b>SO4a:</b> Partnerships/stewardships established and maintained	<ul style="list-style-type: none"> <li>• Multi-sectoral engagement</li> <li>• Development of terms of reference/memoranda of agreement (MoAs)</li> </ul>	Catchment-related roleplayers (irrigation boards/water user associations, DWS, WSAs, traditional authorities, commercial sector, agricultural sector, NGOs, forestry etc.)
3	<b>SO7a:</b> Adaptive systems-based management is applied at catchment level	<ul style="list-style-type: none"> <li>• Incorporate climate change adaptation (via a strategy)</li> <li>• Convene joint operating committee meetings where 'interventions' to mitigate effect of drought, flooding and other catchment-related disasters are proposed, deliberated and agreed upon</li> </ul>	WRC, academic institutions, DWS, environmental NGOs, WSAs
4	<b>SO11a:</b> Sustained capacity for	<ul style="list-style-type: none"> <li>• Internal and external</li> </ul>	DWS, academics,

	Strategic objective	Activities	Key actors
	Government /CMA/sector to effectively manage and support WQM through improved education and training	capacity programmes (workshops, literature and newsletters) <ul style="list-style-type: none"> <li>• Skills transfer (mentorship programmes)</li> <li>• Community awareness programmes</li> </ul>	international exchange programmes, certain NGOs
5	<b>SO12a:</b> Reduction of water losses (e.g. pipeline maintenance, alien plant removal, illegal abstractions) (as proposed by T3)	Comprehensive water loss analysis (infrastructure and environmental conditions) Initiate the removal of alien species within key catchment areas Incentivise water recycling and reuse of grey water and treated effluent Investigate the feasibility of alternative water sources (e.g. desalination, water from atmosphere, incentivising rainwater harvesting, cross boundary (Lesotho Highlands ?)	

T4: Thulani Mnyandu (Umzinyathi District Municipality), Mkhungo Bhabha (DWS/PUCMA: IDS), Mlondi Ngcobo (Umgeni Water), Michael Maluleke (DWS), Paulos Gwalo (Ntuzuma Enviro Cooperative), Thembeke Mthuli (KwaDukuza Municipality)

	Strategic objective	Activities	Key actors
1	SO4b: Governance framework for active citizenry formalized	<ul style="list-style-type: none"> <li>• Proper and comprehensive stakeholder consultation</li> <li>• SMART (simple, measurable, achievable, realistic and time-based) plan should be in place</li> <li>• Allocation of funds to each plan (nationally and provincially)</li> </ul>	
2	<b>SO3b:</b> Inter-sector departmental structures established to support integrated WQM	Formalise the forums Water quality task team meetings with all stakeholders Champion: DWS (quarterly and annually)	
3	<b>SO10a:</b> An integrated and functioning WQ monitoring network	<ul style="list-style-type: none"> <li>• Water quality task team</li> <li>• Establishment of central database for data capturing</li> <li>• provincial or regional water quality report (at</li> </ul>	

	Strategic objective	Activities	Key actors
		least annually) <ul style="list-style-type: none"> <li>• Include both groundwater and surface water monitoring</li> <li>• Farm dwellers to be supported on water quality issues for domestic purposes (local community on the farm)</li> </ul>	
4	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	<ul style="list-style-type: none"> <li>• Bylaws and DWS policies to be reviewed and linked for proper compliance and enforcement</li> <li>• Dealing with offenders in a better way such as holding an individual responsible for bad actions</li> <li>• Improve or increase capacity in the compliance and enforcement departments/authority</li> <li>• Risk management plan/catchment assessment to allow identification of major activity of potential polluters of water</li> <li>• Whistle-blowing channel that needs to be used by the public</li> <li>• Awareness required on safe way for reporting</li> </ul>	
5	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	<ul style="list-style-type: none"> <li>• Empowerment of local community for active involvement in the strategy</li> <li>• Supported by funding (finance)</li> <li>• Champions to be selected from each category (socioeconomic, environmental and political representatives) for successful implementation of the strategy (e.g. local chief)</li> <li>• Political support</li> </ul>	

T5: Siyabonga Buthelezi (DWS/ PUCMA), Lwandle Sibango (DWS EO), Ntombethu (Zethu) Makwabasa (DWS EOC), Halalisiwe Mdletshe (DWS EO)

	Strategic issue/objective	Activities	Key actors
1	<b>STRATEGIC ISSUE 2:</b> Legislative review and amendments to enable integrated WQM	<ul style="list-style-type: none"> <li>• Develop specific regulations to effect provisions of the Act</li> <li>• Prescribe standards and</li> </ul>	

	Strategic issue/objective	Activities	Key actors
		ranges <ul style="list-style-type: none"> <li>• Create synergies with Specific Environmental Management Acts (SEMAs)</li> <li>• Effect and legislate realistic penalties</li> </ul>	
2	<b>STRATEGIC ISSUE 4:</b> Formalise governance frameworks to support non-governmental engagements	<ul style="list-style-type: none"> <li>• Create awareness</li> <li>• Improve functionality of non-governmental partnerships</li> <li>• Establish bilaterals among partners</li> </ul>	
3	<b>STRATEGIC ISSUE 6:</b> Strengthen IWQM Regulation, Compliance and Enforcement	<ul style="list-style-type: none"> <li>• Decentralisation of power (e.g. delegate Reserves, directives, etc.) to Regions/CMAAs</li> <li>• Capacitate <u>DWS</u> (in terms of numbers and expertise) and licence holders</li> <li>• Scientifically sound WULA process (i.e. assessment, WUL, etc.)</li> </ul>	
4	<b>STRATEGIC ISSUE 8:</b> Fiscal support for integrated WQM	<ul style="list-style-type: none"> <li>• Ensure funding/grants are used for intended purposes</li> <li>• Measure performance and expenditure against key objectives and mandates</li> <li>• Hold beneficiaries (e.g. MMs, etc.) accountable for funding/expenditure</li> </ul>	
5	<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<ul style="list-style-type: none"> <li>• Competitive remuneration</li> <li>• Re-profile WQM</li> <li>• Adopt WQM as essential service</li> <li>• Streamline WQM-related procurement processes (e.g. through term contracts for O&amp;M and emergencies)</li> </ul>	



## DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS) - WP10978

### Implications of the WQM Policy and IWQM Strategy for Implementation

#### Regional Workshop: Gauteng

28<sup>th</sup> October 2016 | Protea Hotel Centurion | 09h00 – 15h45

### AGENDA

**Chairperson:** Provincial Chair/P. Viljoen

**Purpose of Meeting:**

- To create awareness regarding the WQM Policy and the IWQM Strategy;
- To obtain comments and inputs into the WQM Policy and the IWQM Strategy;
- To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;
- To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and
- To outline the way forward.

Item	Time	Topic	Responsible
	09h00 – 09h30	Arrival Tea and Coffee	
1	09h30 – 09h50	Welcome, Introductions and Purpose of the Meeting	Chair
2	09h50 – 10h30	Background to Water Quality Management in SA <ul style="list-style-type: none"><li>▪ <i>History, Issues and Challenges</i></li><li>▪ <i>Discussion on Regional Context</i></li></ul>	DWS Project Team
3	10h30 – 11h30	Development of the IWQM Strategy <ul style="list-style-type: none"><li>▪ <i>WQM Policy Responses</i></li><li>▪ <i>IWQM Strategic Responses</i></li><li>▪ Discussion</li></ul>	Pegasys
4	11h30 – 12h45	<b>Workshop 1: Strategic Actions: Review and Prioritisation</b>	Facilitator: Pegasys
	12h45 - 13h30	Lunch	
5	13h30 – 14h45	<b>Workshop 2: Implications for Implementation</b>	Facilitator: Pegasys
7	14h45 – 15h10	Feedback Discussion	Pegasys
8	15h10 – 15h30	Way forward and Closure	Chair





**water & sanitation**  
 Department:  
 Water and Sanitation  
 REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF WATER AND SANITATION  
 DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS)  
 (WP10978)  
 MINUTES OF ROADSHOW WORKSHOP**

**Date:** 28 October 2016

**Time:** 09:00–15:00

**Venue:** Protea Hotel, Centurion

**Present:**

D Rama	ACMP
Chris Boshoff	Afri Forum
Marcus Pawson	Afri Forum
Wayman Kritzing	Agri SA
Vinesh Dilsook	Anglo American Platinum
Anthony Duigan	Armour
Matome Makwela	Chamber of Mines
Nhlanhla Baloyi	City of Johannesburg Metropolitan Municipality
Chris Callaghan	Cleanstream
James Dabrowski	CSIR
Vhahangwele Masindi	CSIR
Lesego Mazibuko	Department of Energy
Carol Hooghiemstra	Digby Wells
Alexra Hlengani	DWS
Moses Mukoto	DWS
Nosibusiso Mfuywa	DWS
Sazi Mthembu	DWS
Barbara Kalembo	DWS Gauteng Provincial Office
Hellen Mathedimosa	DWS GPO
Faith Khosa	DWS GRO
Sivashni Naicker	DWS Groundwater Planning
Isa Thompson	DWS National Water Resource Planning
Seef Rademeyer	DWS National Water Resource Planning
Nolusindiso Jafta	DWS REMP
Dikeledi Baloyi	DWS Resource Protection and Waste
Kama Meso	DWS Resource Protection and Waste
Philani Khoza	DWS Water Ecosystems
Betty Nakene	DWS Water Quality
Busiswe Mudziri	DWS Water Quality
Jackie Jay	DWS Water Quality Planning
Pieter Viljoen	DWS Water Quality Planning
Depa Siphokazi	DWS WIP
Sam Kotsoane	Fezile Dabi District Municipality
Bertus Fourie	Galeyo Environmental CC
Joanna Goeller	Gold Fields
BV Twala	Ikamva
Martin van Veelen	Iliso Consulting
Charlie Crawford	Independent facilitator
Louis Naudé	Jones & Wagener
Alistair Collier	Lehalelo Water User Association & Olifants Joint Water Forum
Derek Weston	Pegasys
Traci Reddy	Pegasys
Thihanezwi Ratshibvumo	Petra Diamonds (Cullinan)
Robyn Arnold	Project team

Warrick Ross	Re-Solve
Thys Kapp	Rowing SA & Usapho Consulting
Karl-Heinz Riedel	Sasol Group Technology
Matsidiso Thelingwani	Sephaka Cement
John Dini	South African National Biodiversity Institute
John Annandale	University of Pretoria
Gavin Snow	University of the Witwatersrand
Mogale Matseba	Vaal River CMA
Victor Nkuna	Vaal River CMA
Bonani Madikizela	Water Research Commission

## WELCOME, INTRODUCTIONS AND PURPOSE OF THE MEETING

Mogale Matseba welcomed everyone on behalf of the Acting DWS provincial head and Acting CEO of the Vaal CMA. He acknowledged the crisis that South Africa is facing. WQM is complicated, and the IWQMS project aims to do something different to address water quality in the country. The various water quality challenges reduce economic activity, for example, by causing diarrhoea that prevents people from coming to work; reducing water quantity through the need to dilute heavily polluted water; and the cost of treatment increasing the cost of water. DWS had therefore embarked on a process to develop a new integrated WQM Strategy. The purpose of the workshop was to present the work done on the project and to solicit comments.

Pieter Viljoen (DWS Water Quality Planning) noted that Einstein once said we cannot expect a different outcome if we keep doing the same thing. We have been doing WQM for some time. The Irrigation Act was promulgated to deal with urbanisation and raw sewage going into rivers; the Act required irrigation of water containing waste on land. We pay municipal rates, assume municipalities are treating effluent to the required standards and generally do not think any further about our impact on downstream water quality.

Water quality is everyone's responsibility. It is wrong to think that only DWS can deal with the challenges. DWS is accountable, but needs the involvement and support of other departments. DWS had been trying to deal with the water quality impacts of the mining, industry and agricultural sectors for many years. Agriculture is a big water user and responsible for food production on which we all depend. All sectors want good water quality, but also impact on it. The 1991 policy was instrumental in the way in which water quality was dealt with in the 1998 National Water Act; and the 2006 policy on addressed resource water quality. DWS now wants to deal with water quality differently. The project is trying to address the actual source of the problem. DWS could do many things better, but even so there would be shortcomings in dealing with waste and water containing waste. The project is a departmental priority and was initiated from ministerial level. Mr Viljoen allowed a round of introductions.

Mr Weston noted that the purpose of the meeting was to:

- Create awareness regarding the WQM Policy and the IWQM Strategy
- Obtain comments and inputs into the WQM Policy and the IWQM Strategy
- Initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the water management areas
- Solicit initial inputs for the conversion of the IWQM Policy and the IWQM Strategy into practice
- Outline the way forward

## BACKGROUND TO WATER QUALITY MANAGEMENT IN SOUTH AFRICA

Mr Weston gave a presentation on the background to water quality management in South Africa.

South Africa is faced with many of the problems related to poor water quality; this may be attributed to the vast number of challenges we face with managing the various sources of pollution, including air pollution, agricultural drift and run-off, industrial wastewater discharges, urban run-off, and challenge with managing run-off from unserved areas, mine water and sewage water.

Many factors contribute to the WQM challenges, including:

- Sources of water pollution are complex. There are varying sources of pollution (point source, diffuse) and water quality changes along the hydrological regime.
- Catchments are complex socio-economic systems, and some are shared watercourses: Sufficiently integrated and adaptive approaches within and across catchments should be implemented, which is currently lacking.
- Sufficient alignment and coordination is needed within and between government departments. WQM is hampered by poor coordination and conflicting approaches.
- There is insufficient finance for WQM. The available financial resources are insufficient and do not recognise the investment required to counteract economic harm.
- There is insufficient data and information management: Data sharing is a challenge, including transboundary-management. There is a challenge in ensuring that the public has access to information.
- There are capacity and skills constraints in the field of WQM

In response to the country's need to take an improved integrated approach to WQM, DWS has initiated a project to develop a national, integrated Water Quality Management (WQM) Strategy, but before the strategy could be developed the current WQM policies, which were needed in order to give direction to the strategy, would require revision. This is due to the fact that whilst innovative at the time of publication, the current policies (Water Quality Management Policies and Strategies in the RSA in 1991 and the 2006 Resource Directed Management of Water Quality Policy) are dated and not integrated, and need to be aligned with the current overarching policy and legislative frameworks, socio-economic trends and emerging global issues.

The contract for the project was signed on 4 October 2015 and would continue until September 2017. The project comprises five phases: Inception, Assessment, Policy, Strategy and Policy into Practice. The policy and strategy were being developed through an iterative process, whereby first editions of the policy and strategy would be sent out for comment, and would be amended in response to the comments received. The project was currently in the Strategy phase, which spanned from August 2016 until February 2017, which entailed revise, update & integrate existing WQM strategies based on inputs from Stakeholders & assessment phase

All documents produced were available on the DWS project website ([www.dws.gov.za/projects/iwqms](http://www.dws.gov.za/projects/iwqms)). The following documents had been completed to date:

- Inception Report
- Review of WQM Policies and Strategies
- Review of WQM Institutional Arrangements
- Review of WQM Instruments
- Note on the WQM Challenges
- Water Quality Glossary
- Capacity Building Strategy
- Stakeholder Communication Strategy
- Newsletters 1 and 2
- Note on the WQM Policy Principles
- WQM Policy (Edition 1)
- Note on the Strategic Framework

The identified water quality issues that need to be addressed through the WQM Policy and Strategy include: salinisation, nutrient enrichment and eutrophication, acidification and acid mine drainage, erosion and sedimentation, urban runoff pollution, litter and solid waste, microbial pollution, waterborne pathogens and human health, agrochemicals and toxic substances, dissolved oxygen and organic pollution, trace metals, hydrocarbon pollution, thermal pollution, nanoparticles and radioactivity.

There is already considerable knowledge and understanding of many of the priority water quality issues (e.g. eutrophication, salinisation) but many of the issues need more research (e.g. the impact of nanoparticles, metals, hydrocarbons and agrichemicals).

Impacts on water quality by industry, mining, municipalities, mining and urban wash-off were considered, and the following issues were identified:

- **Municipalities:** lack of maintenance of wastewater infrastructure, inappropriate technologies, 'unsexy' infrastructure, the need for financial incentives to attract industry, lack of enforcement, lack of ownership by affected communities, lack of appropriate bylaws, lack of adequate / appropriate urban planning, understanding of mandates is confused, capacity challenges, insufficient resourcing, labour challenges, poor budgeting/ not ring-fencing budgets, lack of political support, politically embarrassing, poor understanding of importance, unsustainable financial model, rapid urbanisation, supply trumps quality
- **Industry:** not meeting discharge standards in municipal environments, legacy water quality issues, wastewater treatment works (WWTW) technology inappropriate, municipalities treat industry as source of revenue, WWTW removes incentives to pre-treat, WDCA on hold, political pressure to attract industry, no incentives to treat, transfers responsibility to meet standards to local municipalities, lack of trust between industry and government, lack of enforcement, inappropriate licence conditions, lack of capacity, ineffective monitoring, limited communication, poor cooperative governance
- **Agriculture:** poor land use practices, over-irrigation, over-fertilisation, over-abstraction, varying contexts (e.g. small vs commercial, communal), extension services weak, poor enforcement, capacity challenges, dispersed spatial nature of agriculture, lack of financial resources, lack of accountability by both government and farmers, jobs trump environment and water quality, not understood to be a priority, poor cooperative governance
- **Urban wash-off:** degradation of wetlands, canalisation of rivers and the degradation of riparian areas and developments in floodplains; lack of maintenance of infrastructure; rapid growth in poorly serviced peri-urban dense settlements; lack of ownership by society; lack of enforcement and lack of bylaws; mindset of not needing to treat; lack of adequate / appropriate urban planning; understanding of mandates is confused; capacity challenges; insufficient resourcing, and spend requirements are huge; lack of political support; poor understanding of importance; rapid urbanisation; unsustainable financial model
- **Mining:** Existing mines not meeting water quality discharge standards; government facing significant challenges in managing impact of abandoned mines; uncertainty around mine closure funds and meeting new closure requirements; insufficient control monitoring and enforcement function at DWS (at national through to local level, also linked to capacity to implement, know-how to hold someone accountable and ability to write proper licence conditions); Weak technical capacity, with water quality officers not knowing how they fit in, inaccurate water use licences, not sure how to enforce, cannot read and interpret water data, lack of knowledge around protected areas or understanding what that really means; Political interference in establishment of mines (e.g. unlicensed mines, establishment of mining in areas that are protected, competing mandates, short-term benefit overshadows long term sustainability); poor cooperative governance and mismatch in departmental mandates; insufficient financial resources

Future trends that with implications for water quality are anticipated to be: climate change, hydraulic fracturing, renewable energy, water–energy–food security nexus, growth of inadequately serviced densely populated settlements and water re-use.

A SWOT analysis identified 28 strengths, 62 weaknesses, 32 opportunities and 45 threats. The following priority actions are proposed in order to respond to the SWOT analysis:

- Promote integration of water quality and quantity
- Formalise cooperative governance structures, processes and resources for water quality regulatory actions
- Formally address overlaps of statutory/regulatory/oversight mandates that affect WQM
- Formalise institutional/legal framework for intervention in municipalities with failing water and sanitation functions
- Strategy and plan for sectoral partnerships and public–private partnerships
- Rolling engagement with DWS senior management on WQM
- Rolling public engagement on joint custodianship of the resource
- Intensify WQM capacity development across sectors
- Overhaul all aspects of water quality monitoring and data management
- Intensify all aspects of control monitoring and enforcement
- Mobilise ex-DWS budget funding of WQM initiatives.

In the international context, good quality water is the foundation for achieving the UN Sustainable Development Goals (SDGs) and further drives the need for an integrated WQM Policy and Strategy for South Africa, for example:

- Goal 1 & 2: No hunger – good water quality is required for the rural and agricultural sector for food production, which is a crucial step in poverty reduction
- Goal 6: Clean water and sanitation
- Goal 14: Life below water speaks to the health of our aquatic systems, which is fundamentally dependent on certain water quality requirements and is affected by changes in water quality.

The literature review of the international experience of WQM identified a number of trends:

#### Strategic alignment

- Water quality problems are increasingly shifting to non-point sources related to failing infrastructure
- Basin water quality rehabilitation and management is a long-term process requiring institutional capacity and financial sustainability, within broader water resources management
- Water resources crisis provides an opportunity to gain political will and momentum, but needs to be sustained
- Catchment WQM requires a combination of technical, regulatory, economic, financial and institutional interventions
- Influencing government financing mechanisms provides a critical means of enabling water quality action
- The SDG indicator process provides an opportunity to address water quality issues.

#### Coherent instruments

- Regulatory and strategic approaches are increasingly focusing on minimising pollution by being stringent on priority sectors
- Clean tech supported by green economy initiatives and financing mechanisms provides targeted ways of reducing pollution at source
- Coherent regulatory regimes and strategic institutional approaches supported by appropriate financial mechanisms and cooperative actions
- Natural (green) infrastructure is recognised as critical aspect of integrated management of water quality in urban and rural settings
- Various economic (and financial) approaches have been attempted, the selection of which should be depend on the individual context and may be targeted
- Good water quality monitoring enables enforcement and compliance, but this can be incrementally developed and funded.

#### Partnerships

- Government needs to play a lead role in driving, coordinating and often financing the remediation, and not always just water quality managers
- Building long-term partnerships is fundamental to sustained and effective local solutions
- Basin institutions lead catchment rehabilitation/protection , through a range of rural and urban measures
- Alignment and consistency is an emerging challenge that requires cooperative governance and regulatory/strategic approaches (vertical and horizontal)
- Private sector has a crucial role to play in minimising its impacts on water resources, and collaborating through water stewardship partnerships
- Civil society has a key role

#### **Discussion**

Wayman Kritzing (Agri SA) commented on (1) the need to take into account the potential impact on water quality of future mining trends and the expansion of mining, since new prospecting and mining rights are being issued around the country; (2) the approach seems to be reactive rather than proactive.

BV Twala (Ikamva) asked for expansion on point 11 of the budgets slide. Mr Weston responded that water quality budgets are largely related to water and sanitation responsibilities. If we want to manage water quality in different ways, we need to expand on the way in which it is resourced (e.g. public-private partnerships, green climate funds).

Mogale Matseba (Vaal River CMA) commented that municipalities were the point of convergence and the common factor in water quality management, and catchments fall into municipalities. The slide on the need to prioritise could assist in planning how to address water quality by breaking the job down into manageable tasks.

Alistair Collier (Lehalelo Water User Association & Olifants Joint Water Forum) commented that the thinking presented represented a silo approach, and he did not see evidence of integration, for example, there was very little reference to synergies between National Environmental Management Act (NEMA) and Mineral and the Petroleum Resources Development Act (MPRDA), and no reference to the Pricing Strategy, especially to the new draft and the new sectors, and way the Pricing Strategy would be implemented to raise funds to mobilise various aspects of water resource management. He asked where the funding would come from for the WQM Policy and IWQM Strategy, since the Pricing Strategy was the only statutory instrument for raising funds for WQM. He asked why the IWQM Strategy was not included in the Pricing Strategy that was about to be published. There is the need to implement a water quality charge, along similar lines to the water infrastructure charge that is included in the Pricing Strategy. The discussion document made only oblique reference to CMAs, and the will drive implementation of the IWQM Strategy, but the money and people required are a huge concern.

Mr Weston responded that these issues would become evident when the Strategy was presented.

Matome Makwela (Chamber of Mines) commented that the development of the IWQM Strategy could learn much from the process of developing the National Water Resource Strategy (NWRS), on which the Chamber of Mines had worked together with DWS. Like the NWRS, the IWQM Strategy talks much of partnerships and what needs to be done. There does not seem to be evidence of the NWRS sectoral implementation plans that were developed. The IWQM Strategy is a subset of the NWRS, but the synergy and linkages between the two are not clear. The international experience is succinctly covered in the NWRS. The learning that came out of the NWRS development process should be revisited.

Bonani Madikizela (Water Research Commission) commented that the WRC had been trying to follow the citizen science route for years. There is a need to strongly emphasise on the ground that people's behaviour has downstream consequences.

Mr Weston responded that everyone needs to become part of the solution.

Wayman Kritzingner (Agri SA) acknowledged the water quality problems. While it is helpful to compare the local situation with international standards, it is also important to establish South African standards and consider the extent to which South Africa complies with or exceeds its own standards.

Pieter Viljoen (DWS Water Quality Planning) responded that the WQM Policy and IWQM Strategy had not yet been presented. The comments had been noted and would be taken seriously to make a difference. There are several existent South African effluent and instream standards. The first South African water quality guideline revisions were in 1996 and then in 1998. The recreational, agricultural (instream) and domestic guidelines were currently being revised. Hydrological modelling requires data from rainfall stations, some of which had been closed down. The WRC was working towards involving private individuals in providing rainfall data, whereby communities would do mini-SAS and enter data into a web-based system.

## **DEVELOPMENT OF THE IWQM STRATEGY**

Ms Reddy gave a presentation on the development of the IWQM Strategy.

A series of steps was followed in developing the WQM Policy and Strategy:

- Outcome 1: Consensus on prioritised water quality issues was preceded by a high-level description a prioritisation of water quality issues

- Outcome 2: Identification of WQM challenges and gaps was preceded by a root cause analysis, insights from a literature review and WQM SWOT analysis
- Outcome 3: Foundation for policy, strategy processes was preceded by the consolidation and way forward.

The core concept of the WQM Policy is that water quality affects the economy and society's well-being. Water quality is a developmental issue. DWS is the sector leader in WQM, but everyone has a role to play, and a joint approach between government departments, the private sector (through initiatives such as the Strategic Water Partners Network) and civil society forms the basis of tackling the water quality challenges facing the country.

The Policy is a collation of existing policies as they relate to WQM, with stakeholder inputs and a literature survey used to identify gaps. It draws on the 1991 Water Quality Management Policies and Strategies in the RSA, the 2006 Resource Directed Management of Water Quality Policy, the National Development Plan, the National Water Act (NWA), the National Water Resource Strategy, the UN Sustainable Development Goals (Agenda 2063), current DWS policies and other departmental policies, including those of the DMR, DEA, DAFF and DRDLR. It was developed based on the information from the Assessment phase, inputs from the project committees, and importantly, inputs from stakeholder discussions. It strengthens existing policy, but also proposes several new positions, the largest being that WQM need to be an inter-governmental responsibility, with DWS as the sector leader. It is hoped that further consultations will strengthen the policy even more.

The aim of the WQM Policy is to:

- Elevate water quality and water quality management on the country's agenda.
- Formalise and institutionalise a common approach to water quality management in South Africa.
- Support a consistent inter-departmental approach to how water quality is managed in the country.
- Support cooperative and integrated approaches to water quality management across sectors.
- Address operational aspects such as taking an integrated approach, broadening finance mechanisms and improving knowledge and information in the execution of the water quality management function.
- Provide a framework to realise improvements in water quality in key systems.
- Guide the development of an IWQM Strategy.

The WQM principles, Policy and Strategy are aligned in the following way:

- The principles establish the fundamental norms, rules, or values that represent what is desirable to the country in terms of WQM. Principles form the foundation on which the policy is developed.
- The Policy provides the overall vision and framework for how water quality should be managed in South Africa for at least, the next two decades.
- The Strategy describes the prioritised strategic actions that need to take place over a five year horizon to realise the WQM envisaged by the policy, together with the enabling environment.
- The implementation plan describes, roles, responsibilities, timeframes and resource requirements to achieve the strategic actions.
- The roll-out of the implementation plan involves monitoring and reporting on implementation performance and the effect the Policy and Strategy implementation has had on water resources.

The 15 policy principles developed in the initial phase were structured around the four areas of governance, economic and finance, operational, and data and information. Several of the policy principles were new in respect of their application to WQM, namely those that are underlined in the following list:

- Governance
  - Principle 1: Government-wide water quality management
  - Principle 2: Subsidiarity and accountability
  - Principle 3: Transboundary water quality management
  - Principle 4: Partnerships
  - Principle 5: Administrative fairness and implementability
  - Principle 6: Administrative penalties (administered by DWS, not through the justice system)
- Economic and finance

- Principle 7: Water quality is a developmental issue
- Principle 8: Broadened funding principles
- Principle 9: Polluter pays
- Operational
  - Principle 10: An integrated and adaptive approach
  - Principle 11: Hierarchies of water use and pollution management decision-making
  - Principle 12: Green/ecological infrastructure restoration and rehabilitation
  - Principle 13: Risk-based approach
- Data and information
  - Principle 14: Collection and protection of data
  - Principle 15: Publicly available information

The Policy is divided into four chapters, each of which describes the problem/challenge that needs to be resolved through the policy; the response to mitigate the challenge; and the principles to be adopted in responding to the challenge. The four chapters are:

- Chapter A: Inclusive WQM for South Africa
- Chapter B: Integrated, adaptive water quality regulation and management
- Chapter C: Financing IWQM
- Chapter D: Building the knowledge and capacity base

**Chapter A: Inclusive WQM for South Africa** deals with the need to see/understand the impact of water quality on the socio-economic and ecological development in the country; the need for an intra- and inter-departmental response to the WQM challenges in the country; some of the key policy aspects that must be addressed in achieving such an approach; and the need to build partnerships between government departments, civil society and the private sector in order to be able to successfully address the challenges. It addresses principles 1, 2, 4 and 7.

**Chapter 2: Integrated, adaptive water quality regulation and management** spells out the nature of an integrated approach to adaptive WQM and key policy framings of the integrated approach to regulation and adaptive management of water quality, including integrated, adaptive catchment planning, following a risk-based approach; and applying a hierarchy approach to decision-making. It addresses principles 3, 4, 5, 10, 11, 12 and 13.

**Chapter 3: Financing IWQM** examines the financial underpinnings of IWQM, looking at tools for financing the required actions, as well as the role of the private sector in this regard. It addresses principles 4, 6, 8 and 9.

**Chapter 4: Building the knowledge and capacity base** describes the policy with regard to the knowledge, human resource capacity and information base requirements to be able to implement the policy approaches. It addressed principles 4, 14 and 15.

It is tempting to believe that it is possible to follow a straight line from setting to achieving the desired objective, but in the real world this is never straightforward and the context is uncertain. Adaptive management therefore becomes a critical part of the process, necessitating ongoing monitoring and evaluation, and the periodic revision of the strategy and implementation plans.

Global good practice has shifted away from setting strategic plans with objectives to be set in a linear way. Global best practice in the private sector places less emphasis on sticking to a strategic plan than on building a rich and engaging corporate purpose; focuses less on formal structural design and more on effective management processes; is less concerned with controlling employees' behaviour than with developing their capabilities and broadening their perspective; and moves beyond the doctrine of strategy, structure and systems to a more organic model built on the development of purpose, process and people.

The challenge is to ensure that the IWQM strategy also builds the capability of people and institutions to manage in an adaptive and proactive manner that responds in a constructive way to the changing environment.

The strategic intent of the Policy and Strategy:



- Is aligned with the strategic objectives of the policy, while being consistent with broader water and development strategies (National Development Plan, NWRS2)
- Is focused on a short term timeframe, while building a platform for future strategies in line with the policy and visions for water quality management
- Prioritises a limited number of critical concerns, while ensuring that other issues are addressed through ongoing management or monitoring for future prioritisation
- Is relevant at national, catchment and local scales, while ensuring horizontal alignment across sectors and institutions at each scale
- Guides the actions/activities to be described in the implementation plans on a short-term basis
- Allows for adaptive response to changing circumstances and achievements based on effective ongoing monitoring and evaluation, during its timeframe.

The vision for WQM in South Africa is that government, in partnership with the private sector and civil society secure good water quality for all, forever.

The mission is to:

- Support a consistent interdepartmental approach to how water quality is managed in the country
- Support cooperation and integrated approaches to WQM across sectors, including civil society
- Adopt an adaptive management approach in which co-creation and co-learning by key players is entrenched
- Realise improvements in water quality in key systems
- Start to build capacity for longer-term improvement in water quality.

The goals of the WQM Policy and Strategy are:

Goal 1: Improved alignment of Policy, Strategy and legislation

Goal 2: Improved governance

Goal 3: Improved, efficient and effective WQM

Goal 4: Innovative finance

Goal 5: Improved knowledge and information management.

The goals are designed to address various strategic issues:

Goal 1: Improved alignment of Policy, Strategy and legislation

- Strategic issue 1: Harmonise policies and strategies to enable improved integrated WQM
- Strategic issue 2: Legislative review and amendments to enable integrated WQM

Goal 2: Improved governance

- Strategic issue 3: Improve integrated WQM institutional structuring
- Strategic issue 4: Formalise governance frameworks to support non-governmental engagements

Goal 3: Improved, efficient and effective WQM

- Strategic issue 5: Improve coordinated integrated planning
- Strategic issue 6: Strengthen integrated WQM regulation, compliance and enforcement
- Strategic issue 7: Applications of systems-based adaptive management approaches

Goal 4: Innovative finance

- Strategic issue 8: Improve and sustain fiscal support for integrated WQM
- Strategic issue 9: Develop pricing and incentive systems that support integrated WQM

Goal 5: Improved knowledge and information management.

- Strategic issue 10: Strengthen monitoring and information management
- Strategic issue 11: Build water quality and WQM capacity through education, training and communication

Whilst there is a need to change our approach to WQM, it must be recognised that there is a well-conceived framework for WQM that needs to continue being implemented.

Implementation would involve:

- Fixing priority issues: This will provide the opportunity to realise success in addressing key issues and will embark on looking at rehabilitation or remediation in critical catchments. This will also entail looking at priority issues that can support the building of capacity and the on-going application of exiting instruments.
- Building capacity: Whilst it is understood that the capacity that the water sector requires will not be in place within the short term, in terms of skills, integrated information and systems, this is an

important issue that needs to be driven immediately and continued over time in order to build adaptive management capacity. This also includes the development of cooperative partnerships across government, private sector and civil society.

- Maintaining and sustaining the system: The on-going processes that the DWS has in place will continue to be utilised to manage water quality across the country. These instruments and systems may require strengthening over time. This could involve exploring ways in which to improve and simplify some these instruments. This would include a drive to look at where instruments and systems can be integrated between departments in order to improve inter-departmental approaches.

## Discussion

Marcus Pawson (Afri Forum) emphasised that the qualifications of those responsible for senior WQM, especially at municipal level, should be a priority.

Ms Reddy responded that ensuring the professionalisation of key services was a priority, especially in municipalities.

Martin van Veelen (Iliso Consulting) noted that we keep talking of failures at local government level to operate infrastructure properly, but the real problem is the way in which local government is organised. In the past, municipalities had a municipal engineer whose job was to work on water, sanitation, electricity and roads provision and maintenance. Large municipalities had both an electrical and a civil engineer. That situation had changed, and municipalities now had municipal managers who focused more on managing municipal social development programmes than on the management of municipal services. Unless we fundamentally change the way in which municipalities are run, we will not see change.

Martin van Veelen (Iliso Consulting) commented on the introduction of free basic water and noted that there is nothing free in life, and providing water for free just means someone else pays. High-end users cross-subsidise low-end users. During times of drought, water demand management strategies are implemented to reduce water used, with the result that municipalities lose revenue. Where will the revenue come from to repair water treatment works. Unless we change the way in which water quality budgets are allocated, we will see no change

Charlie Crawford (Independent facilitator) observed that the implementation of many of strategies depends on the CMA, but the establishment of CMAs has been slow. The IWQM Strategy refers to civil society as partners in implementation, but there are elements of society that will never work together, for example, infrastructure is installed but the cables are stolen. The municipality cannot afford to keep replacing the cables. The proposed strategy will not work if we cannot control criminal element destroying what we have. How does that fit into the strategy?

Wayman Kritzingner (Agri SA) emphasised that DWS needs to draw lines on what it will allow and what it will not (e.g. in relation to the probability of fracking, DWS is not drawing a line of where and where not it will be allowed). What is the position of DWS on uranium mining at Beaufort West, and has DWS registered as an interested and affected party?

Ms Reddy responded that in terms of the National Water Act, the Minister can prohibit certain activities but could not declare any areas protected. This was a proposed amendment to the Act.

Bonani Madikizela (Water Research Commission) was concerned about the capacity to implement the National Water Act, especially chapter 3 on resource directed measures. The FETWater programme had contributed to boosting capacity. He asked whether DWS had facts behind the statement to build or retrain capacity. The human resources budget was not increasing, and in many municipalities was actually decreasing. He pointed out that capacity exists at many levels, from senior management to unskilled workers, and asked which capacity the IWQM Strategy was referring to.

Alistair Collier (Lehalelo Water User Association & Olifants Joint Water Forum) commented that the discussion document was confusing as it merged policy and strategy issues. He recommended that the WQM Policy (long term view) and IWQM Strategy (shorter-term view) should be addressed in two separate documents. He commented that the Strategy did not include a discussion of the merging the

National Water Act and Water Services Act, and the way in which water resource management, and water and sanitation management would work together in future. He was satisfied that the NWA has 'teeth' that allow the DWS to take action.

Ms Reddy responded that the discussion document is a summary, and the WQM Policy and IWQM Strategy are addressed in separate documents, which are available on the project website. The legislation was being amended and was due to be completed by late 2017. The WQM Policy and IWQM Strategy development process would influence the legislative review.

## **WORKSHOP 1: STRATEGIC ACTIONS: REVIEW AND PRIORITISATION**

Workshop participants worked together in teams. The objectives were to:

- Review of the strategic action list and comment and add anything that they felt was missing in the table.
- List ten critical actions that need to be addressed in the province to address water quality and its management
- List three critical actions that need to be addressed nationally to address water quality and its management

Teams recorded their responses in the Strategic Actions Table (see Appendix 3).

## **WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION**

Workshop participants worked together in the same teams as for Workshop 1. The objectives were to answer the following questions for the ten provincial actions that they had prioritised in Workshop 1:

- What are the activities required to achieve these in the province?
- Who are the key actors and what roles do they play?
- How do we ensure implementation?

Alistair Collier (Lehalelo Water User Association & Olifants Joint Water Forum) asked why the issues were being considered according to provinces rather than water management areas or catchments. Mr Weston responded that this related to the way in which DWS was structured.

Teams recorded their responses in on flipcharts, which were typed up as Appendix 4.

## **FEEDBACK DISCUSSION**

Teams had the opportunity to provide feedback to the workshop (Appendix 3 and 4).

## **WAY FORWARD**


This was the fifth of the provincial roadshow workshops. A workshop was scheduled in each province.

The next steps in the process were as follows:

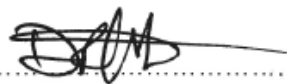
- Gazette Edition 1 of WQM Policy for comment and further revise the Policy to produce Edition 2 (final edition) based on further inputs from wider stakeholder groups (and the public) and the outcomes of the IWQM Strategy development process.
- Develop IWQM Strategy Edition 2 and Implementation Priorities based on inputs from provincial workshops, inputs from project committees and inputs from focused discussions with key stakeholder groups
- National Inter-Departmental Workshop, scheduled for November or December 2016
- National Symposium, scheduled for April 2017.

## **CLOSURE**

Participants were thanked for their attendance and participation. The workshop closed at 15:00.

  
.....  
DWS Project Manager  
Pieter Viljoen  
Scientist Manager: Water Quality Planning

Date: 29/01/2017

  
.....  
PSP Team Leader  
Derek Weston  
Associate Director: Pegasys

Date: 17/01/2017

**APPENDIX 1: LIST OF ACRONYMS**

CEO	Chief executive officer
CMA	Catchment management agency
CME	Control monitoring and enforcement
COGTA	Department of Cooperative Governance and Traditional Affairs
DAFF	Department of Agriculture, Forestry and Fisheries
DDG	Deputy Director General
DEA	Department of Environmental Affairs
DG	Director General
DMR	Department of Mineral Resources
DRDLR	Department of Rural Development and Land Reform
DWS	Department of Water and Sanitation
FETWater	Framework Programme for Research, Education & Training in the Water Sector
IDP	Integrated Development Plan
IWQM	Integrated water quality management
IWRM	Integrated water resource management
MoU	Memorandum of understanding
NGO	Non-governmental organisation
NWA	National Water Act
NWRS	National Water Resource Strategy
O&M	Operations and maintenance
PUCMA	Pongola-Umzimkulu Catchment Management Agency
REMP	River Eco-status Monitoring Programme
RQO	Resource quality objective
SAPS	South African Police Service
SDG	Sustainable Development Goal
SWOT	Strengths, weaknesses, opportunities, threats
SWPN	Strategic Water Partners Network
UK	United Kingdom
UN	United Nations
WDCS	Waste Discharge Charge System
WISA	Water Institute of Southern Africa
WQM	Water quality management
WRC	Water Research Commission
WSA	Water services authority
WSP	Water services provider
WUL	Water use licence
WULA	Water use licence application
WWTW	Wastewater treatment works

**APPENDIX 2: COMMENTS FOR THE COMMENTS REGISTER**

<b>Comment from Gauteng roadshow</b>	<b>Comment made by</b>
There is a need to take into account the potential impact on water quality of future mining trends and the expansion of mining, since new prospecting and mining rights are being issued around the country.	Wayman Kritzinger (Agri SA)
The approach of the Strategy seems to be reactive rather than proactive.	Wayman Kritzinger (Agri SA)
The job of WQM needs to be broken down into manageable tasks.	Mogale Matseba (Vaal River CMA)
The IWQM Strategy is a subset of the NWRS, but the synergy and linkages between the two are not clear. The learning that came out of the NWRS development process should be revisited.	Matome Makwela (Chamber of Mines)
While it is helpful to compare the local situation with international standards, it is also important to establish South African standards and consider the extent to which South Africa complies with or exceeds its own standards.	Wayman Kritzinger (Agri SA)
The qualifications of those responsible for senior WQM, especially at municipal level, should be a priority.	Marcus Pawson (Afri Forum)
The real problem is the way in which local government is organised. In the past, municipalities had municipal engineers. Municipalities now had municipal managers who focused more on managing social development programmes. Unless we fundamentally change the way in which municipalities are run, we will not see change.	Martin van Veelen (Iliso Consulting)
If the Strategy is to be successful it will have to address the issue of criminal elements destroying infrastructure (e.g. by stealing cables).	Charlie Crawford (Independent facilitator)
There is concern about the capacity to implement the National Water Act, especially chapter 3 on resource directed measures.	Bonani Madikizela (Water Research Commission)
The processes for resource directed measures (IWRM) do not necessarily match/overlap with the processes for IWQM. Reserve is a known volume to be managed requiring very different approach to water quality issues	Jackie Jay (DWS Water Quality Planning)
Strategic issue 9 is not adequately supported by the SOs	Jackie Jay (DWS Water Quality Planning)
There is a need to elevate the classification, RQO, Reserve concept – to set objectives and monitor compliance	Jackie Jay (DWS Water Quality Planning)
Perhaps a strategic objective is needed per sector	Jackie Jay (DWS Water Quality Planning)
The relationship between national and local government needs to be addressed.	Jackie Jay (DWS Water Quality Planning)

### APPENDIX 3: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 1 – STRATEGIC ACTIONS: REVIEW AND PRIORITISATION

T1: Philani Khoza (DWS Water Ecosystems), Anthony Duigan (Armour), Warrick Ross (Re-Solve), Wayman Kritzing (Agri SA), Chris Callaghan (Cleanstream), Thihanedzwi Ratshibvumo (Petra Diamonds, Cullinan), Sivashni Naicker (DWS Groundwater Planning)

T2: John Annandale (University of Pretoria), Isa Thompson (DWS National Water Resource Planning), Seef Rademeyer (DWS National Water Resource Planning), Bonani Madikizela (Water Research Commission), John Dini (South African National Biodiversity Institute)

T3: Alistair Collier (Lehalelo Water User Association & Olifants Joint Water Forum), Moses Mukoto (DWS), Vinesh Dilsook (Anglo American Platinum), Sazi Mthembu (DWS)

T4: Nhlanhla Baloyi (City of Johannesburg Metropolitan Municipality), Lesego Mazibuko (Department of Energy), DWS – probably Barbara Kalembo (DWS Gauteng Provincial Office), Kama Meso (DWS Resource Protection and Waste), Dikeledi Baloyi (DWS Resource Protection and Waste)

T5: Chris Boshoff (Afri Forum), Marcus Pawson (Afri Forum), Louis Naudé (Jones & Wagener), Nolusindiso Jafta (DWS REMP), Sam Kotsoane (Fezile Dabi District Municipality)

T6: Gavin Snow (University of the Witwatersrand), BV Twala (Ikamva), Charlie Crawford (Independent facilitator), Karl-Heinz Riedel (Sasol Group Technology)

T7: Carol Hooghiemstra (Digby Wells), Martin van Veelen (Iliso Consulting), Azwindini? (DWS) (possibly Alexia Hlengani), Faith Khosa (DWS GRO), Busiswe Mudziri (DWS Water Quality), Betty Nakene (DWS Water Quality), Nosibusiso Mfuywa (DWS)

T8: Jackie Jay (DWS Water Quality Planning)

#### THE IWQM STRATEGIC OBJECTIVES

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
<b>Strategic Issue 1:</b> Harmonization of Policies and Strategic to enable improved WQM	<b>SO1 a:</b> Policies and Strategies impacting upon IWQM are harmonized	T1: Integrate National Groundwater Strategy. Address silo effect across departments, especially DMR, municipalities and DAFF T3: (1) Identify relevant legislation that gives effect to the policy, then underpinned by strategy (2) Programme lacks sustainability in WQM – people and economy (3) Inclusive and aligned water resource management – not silo effect T4: The policies inform what should go into the strategies. However, the implementation is lacking T6: DWS must ensure CMAs are developed so that all stakeholders can communicate effectively, implement their own licences, develop own IWQM plans and implement their own monitoring programme	T3: X T6: X	
<b>STRATEGIC ISSUE 2:</b> Legislative review and amendments to enable integrated WQM	<b>SO2a:</b> NWA/WSA effectively support integrated WQM	T1: Enforce WQM across legislation (National Environmental Management Act [NEMA] and Mineral and the Petroleum Resources Development Act [MPRDA]) T3: In support T4: Yes	T3: X T4: X	

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
	<b>SO2b:</b> Other legislation effectively supports integrated WQM	T1: Political will required. DWS must be proactive in enforcing compliance T3: (1) Mapping of legislative framework: Constitution, national legislation, provincial legislation, municipal bylaws (2) Civil society programmes/best practice (SWPN and CEO mandate etc.) T4: No, other legislation should effectively support integrated WQM	T4: X	
<b>STRATEGIC ISSUE 3:</b> Improved WQM institutional structuring	<b>SO3a:</b> DWS departmental structures support integrated WQM	T3: (1) CMAs to be appropriately resourced and staffed (2) Clear roles, responsibilities and accountabilities T4: There is a duplication of duties due to working in silos T5: Ensuring different job roles are properly separated and that role players focus on key areas, for example, a proper number of personnel solely focusing on IWQM not having to also be responsible for other roles	T4: X T6: X	T5: X
	<b>SO3b:</b> Inter-sector departmental structures established to support integrated WQM	T3: Reaffirm the silo approach; support integrated approach (IWRM) T4: Yes, however, the implementation thereof is a challenge T6: Support for integration between the various departments (avoid conflicting activities)	T4: X T6: X	T5: X
<b>STRATEGIC ISSUE 4:</b> Formalise governance frameworks to support non-governmental engagements	<b>SO4a:</b> Partnerships/stewardships established and maintained	T1: Protect whistle blowers ± act on information. Catchment management agencies – must allow civil society to have a voice T3: (1) NWA makes provision for frameworks (2) All well and good. What traction does a partnership get? Value proposition T4: Yes, through stakeholder forum engagement T5: Facilitate open door policy for NGOs/stakeholders T6: Do these points include the development of standalone CMAs?		T1: X T3: X T4: X T6: X
	<b>SO4b:</b> Governance framework for active citizenry formalized	T2: Encourage active citizenry based on trust, transparency and collaboration as partners. NO THEM AND US – OURS! Citizenry = people need to be informed about. T3: Supported. Roll out in CMA to include civil society Yes, through public participation as a requirement by the Act		T2: X T3: X T4: X T6: X
<b>STRATEGIC ISSUE 5:</b> Improved coordination in integrated planning	<b>SO5a:</b> Integrated sectoral planning approach is adopted at transboundary and national level	T1: DWS needs to take leadership role in ensuring coordination T3: Reservation – statement too broad. Start at municipal level, leading to clusters, and from National Development Plan to IDP T4: Yes, e.g. Lesotho Highlands	T1: X T3: X	



STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
	<b>SO5b:</b> Integrated sectoral planning approach adopted in catchment/regional plans	<p>T3: Developing policy for action at catchment level</p> <p>T4: Yes, however few catchments have this approach in place</p> <p>T8: All sectors to work towards meeting RQOs. Integrated catchment plans needed</p>		T6: X
<b>STRATEGIC ISSUE 6:</b> Strengthen IWQM Regulation, Compliance and Enforcement	<b>SO6a:</b> Licencing processes streamlined	<p>T1: 6a should not be priority. First solve current problems – not only streamlined – must control (e.g. metering). Address silo effect</p> <p>T2: Quality of licencing conditions needs improvement. Compliance monitoring and enforcement against conditions</p> <p>T3: Is DWS guideline in place? Please implement</p> <p>T4: Yes, however it is not implemented due to capacity</p> <p>T6: Currently all licencing is conducted at a national level but should all ideally be implemented at a provincial (catchment) level. This is an area of weakness</p> <p>T7: (1) The water quality standards included into the WUL must be practical e.g. it cannot be better than the background (2) Conditions need to be applicable and site specific (3) Officials need to be trained (WQM training) in order to understand what WUL want to achieve</p> <p>T8: An improved quality of licences required</p>	T1: X	<p>T3: X</p> <p>T4: X</p> <p>T6: X</p> <p>T7: X</p>
	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	<p>T1: Agreed, but at higher level – legislative review. Water quantity and quality need to take precedence over mining. How many directives are given out? How many as complied with?</p> <p>T2: Do what should be done by those responsible for CME</p> <p>T3: 'Blue Scorpions' approach to IWRM</p> <p>T4: No, requires more strengthening</p> <p>T5: For implementation ensure that there are guidelines and information about proper channels to be followed to ensure this strategic objective is effectively implemented</p> <p>T6: Good laws poorly enforced</p> <p>T7: (1) Reporting on compliance at the end of the year on each WUL (2) Data must be captured on a monthly basis e.g. Blue Drop, Green Drop system (3) Water use licensees must capture their own data on system and DWS to verify this e.g. Blue Drop, Green Drop system, to ensure data is readily available</p>	<p>T1: XXX</p> <p>T5: X</p>	<p>T2: X</p> <p>T3: X</p> <p>T4: X</p> <p>T6: X</p> <p>T7: X</p>

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
<b>STRATEGIC ISSUE 7:</b> Application of Systems-based Adaptive Management Approaches	<b>SO7a:</b> Adaptive systems-based management is applied at catchment level	<p>T1: CMA does not have power to enforce – they must give directive over a shorter period (e.g. 6 months, dependent on project. DWS National Office must enforce</p> <p>T2: Place emphasis on implementation of RQOs as a new legislative instrument</p> <p>T4: There are no systems in place; there is no catchment management strategy</p> <p>T6: Adaptive management (feedback loop) must be implemented at a catchment scale refined over time</p> <p>T8: SO7 links to SO10 – because monitoring allows for adaptive management</p>	<p>T1: X</p> <p>T2: X</p>	<p>T4: X</p> <p>T6: X</p>
<b>STRATEGIC ISSUE 8:</b> Fiscal support for integrated WQM	<b>SO8a:</b> WQM interventions are financially supported by the fiscus	<p>T1: (1) Polluter pays (2) Incentives to comply (3) Fines must be higher than cost of rectification – tiered fine system increasing every month</p> <p>T4: Yes, challenges are with the efficiency</p> <p>T6: Any income generated within the CMA should be managed within that CMA. National may be needed to subsidise</p> <p>T8: Need a debate on this</p>	<p>T1: X</p> <p>T4: X</p>	<p>T1: X</p> <p>T6: X</p>
<b>STRATEGIC ISSUE 9:</b> Develop pricing and incentives that support integrated WQM	<b>SO9a:</b> The Waste Discharge Charge System is implemented	<p>T1: (1) Polluter pays (2) Incentives to comply (3) Fines must be higher than cost of rectification – tiered fine system increasing every month</p> <p>T2: Component of water price needs to address WQM Water Pricing Strategy (catchment management charge)</p> <p>T5: (1) Discourage pollution, maybe by charging very high fees for pollution, and even higher if pollutants exceed a certain threshold (2) Ringfence this money to be only used for remediation of that pollution</p> <p>T6: If a user uses X litres of water they pay step tariff for water used. Is a similar system used for waste discharge? However it is discharged, the system must be implemented at a catchment level. Pricing based on load, but is a cost-benefit analysis conducted? Basis for licensing must be transparent and based on good business practice</p> <p>T8: (1) Need a debate on this (2) Make this broader than WDCCS so that it includes Pricing Strategy, including the wider resource</p>	<p>T1: XX</p> <p>T2: X</p> <p>T3: X</p>	<p>T1: X</p> <p>T3: X</p> <p>T4: X</p> <p>T5: X</p>

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
		management charge (3) Because have to stop looking at the fiscus – it cannot support the requirements but it must be ringfenced		
	<b>SO9b:</b> Mechanisms for incentivising good practice developed	T1: (1) Polluter pays (2) Incentives to comply (3) Fines must be higher than cost of rectification – tiered fine system increasing every month T5: (1) Encourage industries to reduce pollution by incentives such as rebates, discount, or reduced water usage cost (2) Municipalities can gain equitable shares when not wasting water	T1: X T3: X	T2: X T3: X T4: X T5: X
	T8: <b>SO9C:</b> There are other ways of collecting money			
<b>STRATEGIC ISSUE 10:</b> Strengthen Monitoring and Information Management	<b>SO10a:</b> An integrated and functioning WQ monitoring network	T1: (1) Absolutely! Monitoring <u>and</u> implementing sanctions (2) formalise citizen monitoring (e.g. Riverwatch on WhatsApp) (3) Also Crimeline-like system for whistle blowers T2: RQOs. Emerging contaminants T5: (1) Improvement of communication and liaison that is not just between departments but involves the stakeholders (2) Easy access to departments for access or reporting incidents T6: All conducted through the national level (e.g. River Eco-status Monitoring Programme - REMP). The groundwork is conducted at catchment level and information fed into national database T8: (1) Define what is meant by <u>functioning</u> . (2) There is a monitoring network in place but the problem is that it is not ringfenced (3) There is a lot of resistance in the department to monitoring for monitoring's sake – monitoring vs management of the catchment – therefore monitoring must be for a purpose	T1: XX T5: X T6: X	T1: X T3: X
	<b>SO10b:</b> Information systems that are current and accessible to support adaptive WQM	T6: All conducted through the national level (e.g. REMP). The groundwork is conducted at catchment level and information fed into national database	T1: X T6: X	T3: X
	<b>SO10c:</b> Routine assessments inform adaptive WQM	T2: The protocols and systems that have been developed need to be implemented and sustained T6: All conducted through the national level (e.g. REMP). The groundwork is conducted at catchment level and information fed into national database T8: What is the difference between SO10 and SO10c. Monitoring	T6: X	T2: X

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
		for a purpose = adaptive WQM		
<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	T1: Education is a fundamental issue. Is there a way to educate through impact T2: Appropriate skilling, succession planning and proper appointments. Retention of skills experienced staff T5: Government to ensure that people holding positions should meet the minimum requirements to be effective in a particular position. If there are existing people without these qualifications, they should be given time to obtain qualifications T6: Funding generally covered at national level T8: What is meant by capacity? Succession planning, retention + appropriate appointments, appropriate job descriptions supported by a learning programme. WISA is setting up professional registrations for different categories with a set of standards (e.g. process controllers)	T1: XXXX T2: X T5: X	T1: X T2: X T3: X T5: X
	<b>SO11b:</b> WQM decisions are underpinned by best practice, research and innovation			
	<b>SO11c:</b> A well informed and actively engaged South Africa			T4: X

**General Comments:**

T1: Does not seem to be anyone present from DWS Regulation

T6: At the national level, the emphasis should be on licensing and capacity building.

The processes for resource directed measures (IWRM) do not necessarily match/overlap with the processes for IWQM. Reserve is a known volume to be managed requiring very different approach to water quality issues

T8: Strategic objectives link to each other (e.g. need capacity – money and staff – to implement WDCS), therefore it's interdependent and hard to prioritise. Whatever you prioritise will have a knock-on effect

Strategic issue 9 is not adequately supported by the SOs

There is a need to elevate the classification, RQO, Reserve concept – to set objectives and monitor compliance

Where does compliance with RQOs fit in? – integrated planning (SO5)?

Which SO addresses municipalities – SO7? Need an SO per sector?  
Need to address the relationship between national and local government

#### APPENDIX 4: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION

T1: Philani Khoza (DWS Water Ecosystems), Anthony Duigan (Armour), Warrick Ross (Re-Solve), Wayman Kritzing (Agri SA), Chris Callaghan (Cleanstream), Thihanedzwi Ratshibvumo (Petra Diamonds, Cullinan), Sivashni Naicker (DWS Groundwater Planning)

	<b>Strategic issue/objective</b>	<b>Activities</b>	<b>Key actors</b>
1	<b>SO4a:</b> Partnerships/stewardships established and maintained	CMAs should be equal partners with DWS Listen and act on whistle blowers (and protect)	Civil society is key driver to leverage correct water quality and quantity managed Local authority DWS
2	<b>SO8a:</b> WQM interventions are financially supported by the fiscus <b>SO9a:</b> The Waste Discharge Charge System is implemented <b>SO9b:</b> Mechanisms for incentivising good practice developed	Substantial fines for non-compliance (rectification) Financial incentives for compliance (% deduction)	Local authority – individuals DWS/Blue Scorpions for municipality
3	<b>SO10a:</b> An integrated and functioning WQ monitoring network	Controlled by CMA: <ul style="list-style-type: none"> <li>Enhanced real time (WhatsApp river watch)</li> <li>All users in one database</li> <li>Active provincial call centre (like Crimeline)</li> </ul>	CMA, civil society
4	<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	Basic real practical education at schools and community is fundamental (water quality, water service, water usage) NB: <ul style="list-style-type: none"> <li>Water quality in extreme events</li> <li>Protection zoning (to what depth)</li> </ul>	In curriculum (Department of Education) Civil society Councillors meetings

T2: John Annandale (University of Pretoria), Isa Thompson (DWS National Water Resource Planning), Seef Rademeyer (DWS National Water Resource Planning), Bonani Madikizela (Water Research Commission), John Dini (South African National Biodiversity Institute)

	<b>Strategic issue/objective</b>	<b>Activities</b>	<b>Key actors</b>
1	<b>SO4b:</b> Governance framework for active citizenry formalized	Encourage active citizenry based on trust, transparency and collaboration as partners. NO THEM AND US – OURS! Citizenry = people need to be informed about.	Farmers Sensitise media School education re WQM
2	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	Do what should be done	Those responsible for CME
3	<b>SO9b:</b> Mechanisms for incentivising good practice developed		DWS, WRC, National Treasury, mines, business, global donors

	<b>Strategic issue/objective</b>	<b>Activities</b>	<b>Key actors</b>
4	<b>SO10c:</b> Routine assessments inform adaptive WQM	T2: The protocols and systems that have been developed need to be implemented and sustained	WRC, CMAs, water user associations, local authorities, national authorities, academia, research institutions
5	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	T2: Appropriate skilling, succession planning and proper appointments. Retention of skills experienced staff	National government, local government, provincial government, NGOs, water boards, water utilities, mines

T3: Alistair Collier (Lehalelo Water User Association & Olifants Joint Water Forum), Moses Mukoto (DWS), Vinesh Dilsook (Anglo American Platinum), Sazi Mthembu (DWS)

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
1	<b>STRATEGIC ISSUE 4:</b> Formalise governance frameworks to support non-governmental engagements	Ministerial clusters impacting on water (quality) [IWRM], must be structured; transparent and accessible (civil society)	Cabinet level and ministers
2	<b>STRATEGIC ISSUE 6:</b> Strengthen IWQM Regulation, Compliance and Enforcement	Licensing is over-engineering. Please simplify. Guideline in place – pragmatic on roll out	DG and DDG
3	<b>STRATEGIC ISSUE 9:</b> Develop pricing and incentives that support integrated WQM	Develop an integrated financial model based on abstraction and discharge	CMA
4	<b>STRATEGIC ISSUE 10:</b> Strengthen Monitoring and Information Management	Real-time monitoring availability Regional water utilities – data sharing	DWS and WSP
5	<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	Get to grass roots through a purposed 'water schools' Short, long term certificates #FreeLearning/Education	DWS

T4: Nhlanhla Baloyi (City of Johannesburg Metropolitan Municipality), Lesego Mazibuko (Department of Energy), DWS – probably Barbara Kalembo (DWS Gauteng Provincial Office), Kama Meso (DWS Resource Protection and Waste), Dikeledi Baloyi (DWS Resource Protection and Waste)

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
1	<b>SO4a:</b> Partnerships/stewardships established and maintained <b>SO4b:</b> Governance framework for active citizenry formalized	Develop guidelines/policy/MoU for partnerships and stewardship Continuous engagements	
2	<b>SO6a:</b> Licencing processes streamlined <b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	Realistic timeframes Capacity training Dedicated unit including specialists Enforceable licence conditions	
3	<b>SO7a:</b> Adaptive systems-based	Designated,	

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
	management is applied at catchment level	knowledgeable and passionate managers Monitoring of information	
4	<b>SO9a:</b> The Waste Discharge Charge System is implemented <b>SO9b:</b> Mechanisms for incentivising good practice developed	Capacity building Simplified systems	
5	<b>SO11c:</b> A well informed and actively engaged South Africa	Awareness/information <u>must</u> be accessible to all persons Incorporate WQM issues in basic education curriculum	

T5: Chris Boshoff (Afri Forum), Marcus Pawson (Afri Forum), Louis Naudé (Jones & Wagener), Nolusindiso Jafta (DWS REMP), Sam Kotsoane (Fezile Dabi District Municipality)

	<b>Strategic issue/objective</b>	<b>Activities</b>	<b>Key actors</b>
1	<b>SO3a:</b> DWS departmental structures support integrated WQM	Ensuring different job roles are properly separated and that role players focus on key areas, for example, a proper number of personnel solely focusing on IWQM not having to also be responsible for other roles	DWS, provincial government, regional heads, CMA CEO
2	<b>SO4a:</b> Partnerships/stewardships established and maintained	Facilitate open door policy for NGOs/stakeholders	Stakeholders, municipalities, DWS regional office
3	<b>SO9a:</b> The Waste Discharge Charge System is implemented	(1) Discourage pollution, maybe by charging very high fees for pollution, and even higher if pollutants exceed a certain threshold (2) Ringfence this money to be only used for remediation of that pollution (3) Encourage industries to reduce pollution by incentives such as rebates, discount, or reduced water usage cost (4) Municipalities can gain equitable shares when not wasting water	DWS regional office, local municipal manager
4	<b>SO9b:</b> Mechanisms for incentivising good practice developed	(1) Encourage industries to reduce pollution by incentives such as rebates, discount, or reduced water usage cost (2) Municipalities can gain equitable shares when not wasting water	DWS regional office, municipal manager
5	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	Government to ensure that people holding positions should meet the minimum requirements to be effective in a particular	DWS for minimum requirements, HR at municipal level, regional office, municipal manager



	Strategic issue/objective	Activities	Key actors
		position. If there are existing people without these qualifications, they should be given time to obtain qualifications	

T6: Gavin Snow (University of the Witwatersrand), BV Twala (Ikamva), Charlie Crawford (Independent facilitator), Karl-Heinz Riedel (Sasol Group Technology)

	Strategic objective	Activities	Key actors
1	<b>STRATEGIC ISSUE 2:</b> Legislative review and amendments to enable integrated WQM	Note: SI2 should include all sectors, not just mining	
2	<b>SO4a:</b> Partnerships/stewardships established and maintained <b>SO4b:</b> Governance framework for active citizenry formalized	DWS needs to promote the development of all CMAs; this is essential for local key stakeholders (civil society) to communicate to the national level (effective feedback loop)	
3	<b>STRATEGIC ISSUE 5:</b> Improved coordination in integrated planning	Note: SI5 should include all sectors, not just mining	
4	<b>SO6a:</b> Licencing processes streamlined <b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	Water use licences should be at CMA level; DWS only provide guidelines and the final 'rubber stamp' (customised/contextualised).	
5	<b>STRATEGIC ISSUE 7:</b> Application of Systems-based Adaptive Management Approaches	CMAs to develop protocols for systems-based adaptive management for IWQM (with DWS and DEA), then to implement monitoring programme	
6	<b>SO9a:</b> The Waste Discharge Charge System is implemented	Same as 6a and 6b; a thorough transparent cost-benefit analysis is needed before WDCCS is implemented	

T7: Carol Hooghiemstra (Digby Wells), Martin van Veelen (Iliso Consulting), Alexra Hlengani Azwindini? (DWS), Faith Khosa (DWS GRO), Azwindini? (DWS) (possibly Alexia Hlengani), Busiswe Mudziri (DWS Water Quality), Betty Nakene (DWS Water Quality), Nosibusiso Mfuywa (DWS)

	Strategic objective	Activities	Key actors
1	<b>SO6a:</b> Licencing processes streamlined	T7: (1) The water quality standards included into the WUL must be practical e.g. it cannot be better than the background (2) Conditions need to be applicable and site specific (3) Officials need to be trained (WQM training) in order to understand what WUL want to achieve	
2	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	1) Reporting on compliance at the end of the year on each WUL (2) Data must be captured on a monthly basis e.g. Blue	

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
		Drop, Green Drop system (3) Water use licensees must capture their own data on system and DWS to verify this e.g. Blue Drop, Green Drop system, to ensure data is readily available	



## DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS) - WP10978

### Implications of the WQM Policy and IWQM Strategy for Implementation

#### Regional Workshop: Mpumalanga

1<sup>st</sup> November 2016 | Nelspruit Hotel and Conference Centre | 09h00 – 15h45

### AGENDA

**Chairperson:** Provincial Chair/P. Viljoen

**Purpose of Meeting:**

- To create awareness regarding the WQM Policy and the IWQM Strategy;
- To obtain comments and inputs into the WQM Policy and the IWQM Strategy;
- To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;
- To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and
- To outline the way forward.

Item	Time	Topic	Responsible
	09h00 – 09h30	Arrival Tea and Coffee	
1	09h30 – 09h50	Welcome, Introductions and Purpose of the Meeting	Chair
2	09h50 – 10h30	Background to Water Quality Management in SA <ul style="list-style-type: none"><li>▪ <i>History, Issues and Challenges</i></li><li>▪ <i>Discussion on Regional Context</i></li></ul>	DWS Project Team
3	10h30 – 11h30	Development of the IWQM Strategy <ul style="list-style-type: none"><li>▪ <i>WQM Policy Responses</i></li><li>▪ <i>IWQM Strategic Responses</i></li><li>▪ <i>Discussion</i></li></ul>	Pegasys
4	11h30 – 12h45	<b>Workshop 1: Strategic Actions: Review and Prioritisation</b>	Facilitator: Pegasys
	12h45 - 13h30	Lunch	
5	13h30 – 14h45	<b>Workshop 2: Implications for Implementation</b>	Facilitator: Pegasys
7	14h45 – 15h10	Feedback Discussion	Pegasys
8	15h10 – 15h30	Way forward and Closure	Chair



**water & sanitation**  
 Department:  
 Water and Sanitation  
 REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF WATER AND SANITATION  
 DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS)  
 (WP10978)  
 MINUTES OF ROADSHOW WORKSHOP**

**Date:** 1 November 2016

**Time:** 09:00–15:00

**Venue:** Nelspruit Hotel and Conference Centre, Mbombela

**Present:**

Litshani Magoba	DWS
Nonceba Noqayi	DWS CME
Sanantna Saayman	DWS CME
Masala Nemubula	DWS Environmental Officer
Nomadiba Lamani	DWS Environmental Officer
Percy Ratombo	DWS Environmental Officer
Samuel Maliaga	DWS Environmental Officer
Mercy Ralushai	DWS Geohydrology
Patricia Mdhlovu	DWS Head Office
Deon Joubert	DWS Hydro Mpumalanga
Adam Ramalisa	DWS IE WQM
Portia Munyai	DWS IE WQM
Marcia Macapatle	DWS Mpumalanga
Sydney Nkuna	DWS Mpumalanga
Rasekhwela Kgaogela	DWS Strategy Coordination
Phindi Mlangeni	DWS SWSS (Pretoria)
Khanyiso Nkumanda	DWS Water Policy
Pieter Viljoen	DWS Water Resource Planning
Nnzumbeni Tshikalange	DWS WQM
Geert Grobler	DWS WRPS
Lebo Mosoa	DWS WRPS
Zanele Maphumello	DWS WUE
Lutho Totsa	Eskom
Nthabiseng Ntoampe	Eskom
Debbie Turner	Irrigation Boards
Nancy O'Farrell	Irrigation Boards
Ronelle Putter	Irrigation Boards
Caroline Tlowana	IUCMA
Mduduzi Nkuna	IUCMA
Busi Mahlangu	IUCMA Control Environmental Officer
Thabo Cecil Rasiuba	IUCMA Control Environmental Officer
Marcus Selepe	IUCMA Manager
Adolph Mbetse	IUCMA WQM
Rofhiwa Ramunenyiwa	IUCMA WQM
Stephan Kitching	Jaco K Consulting
Ronel Oelofse	Kaap River Irrigation Board
Nokwanda Mhlanga	KOBWA
Sakhiwe Nkomo	KOBWA
Martin Slabbert	Komati River Irrigation Board (KRIB) & LRIB
Robert Davel	Mpumalanga Agri
Betty Mnguni	Olifants Proto-CMA
Hloniphekile Ayanda Madonsela	Olifants Proto-CMA
Mmadi Moloto	Olifants Proto-CMA
Mokgadi Maloba	Olifants Proto-CMA

Musa Lubambo	Olifants Proto-CMA
Isaac Tlagadi	Olifants Proto-CMA Environmental Officer
Linda Desmet	Palabora Copper
Derek Weston	Pegasys
Traci Reddy	Pegasys
Robyn Arnold	Project team
Thabang Mokgatle	Quality Engineering
Eddie Riddell	SANParks
Robin Pietersen	SANParks
Guiseppe Sappa	Sapienza University, Rome
Mouritri Bezibieri	Sapienza University, Rome
Yolanda Oosthuizen	SEMBCORP Silulumanzi

## WELCOME, INTRODUCTIONS AND PURPOSE OF THE MEETING

Sydney Nkuna welcomed everyone on behalf of the DWS provincial head. He noted that the DWS, CMA and Proto-CMA are overseeing two water management areas, the Olifants and Inkomati-Usuthu. He emphasised that it was important for both internal and external stakeholders to participate in the workshop. All inputs are welcome and valuable. IWQM requires the input of stakeholders. Consultation tries to reach the wider audience but it is not always possible. Consultation is ongoing and the product is developed jointly between stakeholders and DWS. Stakeholders are also involved in successful implementation.

Pieter Viljoen (DWS Water Quality Planning) welcomed everyone. He emphasised that this is not just a departmental project but a sectoral project. He pointed out that this was not a public participation meeting but a workshop for invited stakeholders. The policy would be gazetted for public comment, during which time there would be public participation meetings. Water quality is dealt with by a number of different directorates and provincial offices in DWS. Integrated WQS even at departmental level is complex. Water quality had been legislated since 1919 with the Irrigation Act to deal with wastewater as a result of urbanisation. The Act required all water containing waste to be irrigated on land. Almost a century later, water quality was still negatively impacted by urbanisation and continued to deteriorate. The challenge is to consider different ways of managing water. The current command and control approach was not working. Einstein once said we cannot expect a different outcome if we keep doing the same thing. A fundamental aspect of the IWQM Strategy is its intergovernmental, intersectoral and community-based approach. The intention is that the Strategy should make a difference. Mr Viljoen allowed a round of introductions.

Mr Weston noted that the purpose of the meeting was to:

- Create awareness regarding the WQM Policy and the IWQM Strategy
- Obtain comments and inputs into the WQM Policy and the IWQM Strategy
- Initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the water management areas
- Solicit initial inputs for the conversion of the IWQM Policy and the IWQM Strategy into practice
- Outline the way forward

## BACKGROUND TO WATER QUALITY MANAGEMENT IN SOUTH AFRICA

Mr Weston gave a presentation on the background to water quality management in South Africa.

South Africa is faced with many of the problems related to poor water quality; this may be attributed to the vast number of challenges we face with managing the various sources of pollution, including air pollution, agricultural drift and run-off, industrial wastewater discharges, urban run-off, and challenge with managing run-off from unserved areas, mine water and sewage water.

Many factors contribute to the WQM challenges, including:

- Sources of water pollution are complex. There are varying sources of pollution (point source, diffuse) and water quality changes along the hydrological regime.

- Catchments are complex socio-economic systems, and some are shared watercourses: Sufficiently integrated and adaptive approaches within and across catchments should be implemented, which is currently lacking.
- Sufficient alignment and coordination is needed within and between government departments. WQM is hampered by poor coordination and conflicting approaches.
- There is insufficient finance for WQM. The available financial resources are insufficient and do not recognise the investment required to counteract economic harm.
- There is insufficient data and information management: Data sharing is a challenge, including transboundary-management. There is a challenge in ensuring that the public has access to information.
- There are capacity and skills constraints in the field of WQM

In response to the country's need to take an improved integrated approach to WQM, DWS has initiated a project to develop a national, integrated Water Quality Management (WQM) Strategy, but before the strategy could be developed the current WQM policies, which were needed in order to give direction to the strategy, would require revision. This is due to the fact that whilst innovative at the time of publication, the current policies (Water Quality Management Policies and Strategies in the RSA in 1991 and the 2006 Resource Directed Management of Water Quality Policy) are dated and not integrated, and need to be aligned with the current overarching policy and legislative frameworks, socio-economic trends and emerging global issues.

The contract for the project was signed on 4 October 2015 and would continue until September 2017. The project comprises five phases: Inception, Assessment, Policy, Strategy and Policy into Practice. The policy and strategy were being developed through an iterative process, whereby first editions of the policy and strategy would be sent out for comment, and would be amended in response to the comments received. The project was currently in the Strategy phase, which spanned from August 2016 until February 2017, which entailed revise, update & integrate existing WQM strategies based on inputs from Stakeholders & assessment phase

All documents produced were available on the DWS project website ([www.dws.gov.za/projects/iwqms](http://www.dws.gov.za/projects/iwqms)). The following documents had been completed to date:

- Inception Report
- Review of WQM Policies and Strategies
- Review of WQM Institutional Arrangements
- Review of WQM Instruments
- Note on the WQM Challenges
- Water Quality Glossary
- Capacity Building Strategy
- Stakeholder Communication Strategy
- Newsletters 1 and 2
- Note on the WQM Policy Principles
- WQM Policy (Edition 1)
- Note on the Strategic Framework

The identified water quality issues that need to be addressed through the WQM Policy and Strategy include: salinisation, nutrient enrichment and eutrophication, acidification and acid mine drainage, erosion and sedimentation, urban runoff pollution, litter and solid waste, microbial pollution, waterborne pathogens and human health, agrochemicals and toxic substances, dissolved oxygen and organic pollution, trace metals, hydrocarbon pollution, thermal pollution, nanoparticles and radioactivity.

There is already considerable knowledge and understanding of many of the priority water quality issues (e.g. eutrophication, salinisation) but many of the issues need more research (e.g. the impact of nanoparticles, metals, hydrocarbons and agrichemicals).

Impacts on water quality by industry, mining, municipalities, mining and urban wash-off were considered, and the following issues were identified:

- Municipalities: lack of maintenance of wastewater infrastructure, inappropriate technologies, 'unsexy' infrastructure, the need for financial incentives to attract industry, lack of enforcement,

lack of ownership by affected communities, lack of appropriate bylaws, lack of adequate / appropriate urban planning, understanding of mandates is confused, capacity challenges, insufficient resourcing, labour challenges, poor budgeting/ not ring-fencing budgets, lack of political support, politically embarrassing, poor understanding of importance, unsustainable financial model, rapid urbanisation, supply trumps quality

- Industry: not meeting discharge standards in municipal environments, legacy water quality issues, wastewater treatment works (WWTW) technology inappropriate, municipalities treat industry as source of revenue, WWTW removes incentives to pre-treat, WDCA on hold, political pressure to attract industry, no incentives to treat, transfers responsibility to meet standards to local municipalities, lack of trust between industry and government, lack of enforcement, inappropriate licence conditions, lack of capacity, ineffective monitoring, limited communication, poor cooperative governance
- Agriculture: poor land use practices, over-irrigation, over-fertilisation, over-abstraction, varying contexts (e.g. small vs commercial, communal), extension services weak, poor enforcement, capacity challenges, dispersed spatial nature of agriculture, lack of financial resources, lack of accountability by both government and farmers, jobs trump environment and water quality, not understood to be a priority, poor cooperative governance
- Urban wash-off: degradation of wetlands, canalisation of rivers and the degradation of riparian areas and developments in floodplains; lack of maintenance of infrastructure; rapid growth in poorly serviced peri-urban dense settlements; lack of ownership by society; lack of enforcement and lack of bylaws; mindset of not needing to treat; lack of adequate / appropriate urban planning; understanding of mandates is confused; capacity challenges; insufficient resourcing, and spend requirements are huge; lack of political support; poor understanding of importance; rapid urbanisation; unsustainable financial model
- Mining: Existing mines not meeting water quality discharge standards; government facing significant challenges in managing impact of abandoned mines; uncertainty around mine closure funds and meeting new closure requirements; insufficient control monitoring and enforcement function at DWS (at national through to local level, also linked to capacity to implement, know-how to hold someone accountable and ability to write proper licence conditions); Weak technical capacity, with water quality officers not knowing how they fit in, inaccurate water use licences, not sure how to enforce, cannot read and interpret water data, lack of knowledge around protected areas or understanding what that really means; Political interference in establishment of mines (e.g. unlicensed mines, establishment of mining in areas that are protected, competing mandates, short-term benefit overshadows long term sustainability); poor cooperative governance and mismatch in departmental mandates; insufficient financial resources

Future trends that with implications for water quality are anticipated to be: climate change, hydraulic fracturing, renewable energy, water–energy–food security nexus, growth of inadequately serviced densely populated settlements and water re-use.

A SWOT analysis identified 28 strengths, 62 weaknesses, 32 opportunities and 45 threats. The following priority actions are proposed in order to respond to the SWOT analysis:

- Promote integration of water quality and quantity
- Formalise cooperative governance structures, processes and resources for water quality regulatory actions
- Formally address overlaps of statutory/regulatory/oversight mandates that affect WQM
- Formalise institutional/legal framework for intervention in municipalities with failing water and sanitation functions
- Strategy and plan for sectoral partnerships and public–private partnerships
- Rolling engagement with DWS senior management on WQM
- Rolling public engagement on joint custodianship of the resource
- Intensify WQM capacity development across sectors
- Overhaul all aspects of water quality monitoring and data management
- Intensify all aspects of control monitoring and enforcement
- Mobilise ex-DWS budget funding of WQM initiatives.

In the international context, good quality water is the foundation for achieving the UN Sustainable Development Goals (SDGs) and further drives the need for an integrated WQM Policy and Strategy for South Africa, for example:

- Goal 1 & 2: No hunger – good water quality is required for the rural and agricultural sector for food production, which is a crucial step in poverty reduction
- Goal 6: Clean water and sanitation
- Goal 14: Life below water speaks to the health of our aquatic systems, which is fundamentally dependent on certain water quality requirements and is affected by changes in water quality.

The literature review of the international experience of WQM identified a number of trends:

#### Strategic alignment

- Water quality problems are increasingly shifting to non-point sources related to failing infrastructure
- Basin water quality rehabilitation and management is a long-term process requiring institutional capacity and financial sustainability, within broader water resources management
- Water resources crisis provides an opportunity to gain political will and momentum, but needs to be sustained
- Catchment WQM requires a combination of technical, regulatory, economic, financial and institutional interventions
- Influencing government financing mechanisms provides a critical means of enabling water quality action
- The SDG indicator process provides an opportunity to address water quality issues.

#### Coherent instruments

- Regulatory and strategic approaches are increasingly focusing on minimising pollution by being stringent on priority sectors
- Clean tech supported by green economy initiatives and financing mechanisms provides targeted ways of reducing pollution at source
- Coherent regulatory regimes and strategic institutional approaches supported by appropriate financial mechanisms and cooperative actions
- Natural (green) infrastructure is recognised as critical aspect of integrated management of water quality in urban and rural settings
- Various economic (and financial) approaches have been attempted, the selection of which should be depend on the individual context and may be targeted
- Good water quality monitoring enables enforcement and compliance, but this can be incrementally developed and funded.

#### Partnerships

- Government needs to play a lead role in driving, coordinating and often financing the remediation, and not always just water quality managers
- Building long-term partnerships is fundamental to sustained and effective local solutions
- Basin institutions lead catchment rehabilitation/protection , through a range of rural and urban measures
- Alignment and consistency is an emerging challenge that requires cooperative governance and regulatory/strategic approaches (vertical and horizontal)
- Private sector has a crucial role to play in minimising its impacts on water resources, and collaborating through water stewardship partnerships
- Civil society has a key role

#### **Discussion**

Linda Desmet (Palabora Copper) commented that sandmining is a huge problem, particularly in the Lower Olifants and Selati rivers, and ought to be added to the list water quality problems.

Robin Pietersen (SANParks) suggested that since sandmining is likely to continue, it would be useful to develop standards for this activity. At present, they come in with bulldozers.

Ronelle Putter (Irrigation Boards) observed that unless government became more involved in compliance and enforcement, the situation would not improve. Water user associations would have to be involved in all WQM initiatives for them to succeed.



Nonceba Noqayi (DWS CME) stressed the importance of partnerships, for example with COGTA, in order to draw other parties into compliance and enforcement. The department seemed to lack 'teeth' to address problems such as sandmining.

Robin Petersen (SANParks) emphasised the need for training in legal aspects for officials (SAPS) on the ground. In a recent case, for example, the SAPS was not equipped to take evidence because it did not have a fridge to keep the samples.

Busi Mahlangu (IUCMA Control Environmental Officer) stressed the importance of involving DMR as a party to the IWQM Strategy, since mining processes have serious consequences for water quality.

Marcus Selepe (IUCMA Manager) noted that the DWS and CMAs are hamstrung in regulating sandmining by the cumbersome process of issuing directives and notices, which makes it difficult to take rapid action. Moreover, those who carry out sandmining often do not have fixed addresses. He emphasised the need for partnerships with the police and making provision for issuing spot fines.

## **DEVELOPMENT OF THE IWQM STRATEGY**

Ms Reddy gave a presentation on the development of the IWQM Strategy.

A series of steps was followed in developing the WQM Policy and Strategy:

- Outcome 1: Consensus on prioritised water quality issues was preceded by a high-level description a prioritisation of water quality issues
- Outcome 2: Identification of WQM challenges and gaps was preceded by a root cause analysis, insights from a literature review and WQM SWOT analysis
- Outcome 3: Foundation for policy, strategy processes was preceded by the consolidation and way forward.

The core concept of the WQM Policy is that water quality affects the economy and society's well-being. Water quality is a developmental issue. DWS is the sector leader in WQM, but everyone has a role to play, and a joint approach between government departments, the private sector (through initiatives such as the Strategic Water Partners Network) and civil society forms the basis of tackling the water quality challenges facing the country.

The Policy is a collation of existing policies as they relate to WQM, with stakeholder inputs and a literature survey used to identify gaps. It draws on the 1991 Water Quality Management Policies and Strategies in the RSA, the 2006 Resource Directed Management of Water Quality Policy, the National Development Plan, the National Water Act (NWA), the National Water Resource Strategy, the UN Sustainable Development Goals (Agenda 2063), current DWS policies and other departmental policies, including those of the DMR, DEA, DAFF and DRDLR. It was developed based on the information from the Assessment phase, inputs from the project committees, and importantly, inputs from stakeholder discussions. It strengthens existing policy, but also proposes several new positions, the largest being that WQM need to be an inter-governmental responsibility, with DWS as the sector leader. It is hoped that further consultations will strengthen the policy even more.

The aim of the WQM Policy is to:

- Elevate water quality and water quality management on the country's agenda.
- Formalise and institutionalise a common approach to water quality management in South Africa.
- Support a consistent inter-departmental approach to how water quality is managed in the country.
- Support cooperative and integrated approaches to water quality management across sectors.
- Address operational aspects such as taking an integrated approach, broadening finance mechanisms and improving knowledge and information in the execution of the water quality management function.
- Provide a framework to realise improvements in water quality in key systems.
- Guide the development of an IWQM Strategy.

The WQM principles, Policy and Strategy are aligned in the following way:

The principles establish the fundamental norms, rules, or values that represent what is desirable to the country in terms of WQM. Principles form the foundation on which the policy is developed.

The Policy provides the overall vision and framework for how water quality should be managed in South Africa for at least, the next two decades.

The Strategy describes the prioritised strategic actions that need to take place over a five year horizon to realise the WQM envisaged by the policy, together with the enabling environment.

The implementation plan describes roles, responsibilities, timeframes and resource requirements to achieve the strategic actions.

The roll-out of the implementation plan involves monitoring and reporting on implementation performance and the effect the Policy and Strategy implementation has had on water resources.

The 15 policy principles developed in the initial phase were structured around the four areas of governance, economic and finance, operational, and data and information. Several of the policy principles were new in respect of their application to WQM, namely those that are underlined in the following list:

- Governance
  - Principle 1: Government-wide water quality management
  - Principle 2: Subsidiarity and accountability
  - Principle 3: Transboundary water quality management
  - Principle 4: Partnerships
  - Principle 5: Administrative fairness and implementability
  - Principle 6: Administrative penalties (administered by DWS, not through the justice system)
- Economic and finance
  - Principle 7: Water quality is a developmental issue
  - Principle 8: Broadened funding principles
  - Principle 9: Polluter pays
- Operational
  - Principle 10: An integrated and adaptive approach
  - Principle 11: Hierarchies of water use and pollution management decision-making
  - Principle 12: Green/ecological infrastructure restoration and rehabilitation
  - Principle 13: Risk-based approach
- Data and information
  - Principle 14: Collection and protection of data
  - Principle 15: Publicly available information

The Policy is divided into four chapters, each of which describes the problem/challenge that needs to be resolved through the policy; the response to mitigate the challenge; and the principles to be adopted in responding to the challenge. The four chapters are:

- Chapter A: Inclusive WQM for South Africa
- Chapter B: Integrated, adaptive water quality regulation and management
- Chapter C: Financing IWQM
- Chapter D: Building the knowledge and capacity base

**Chapter A: Inclusive WQM for South Africa** deals with the need to see/understand the impact of water quality on the socio-economic and ecological development in the country; the need for an intra- and inter-departmental response to the WQM challenges in the country; some of the key policy aspects that must be addressed in achieving such an approach; and the need to build partnerships between government departments, civil society and the private sector in order to be able to successfully address the challenges. It addresses principles 1, 2, 4 and 7.

**Chapter 2: Integrated, adaptive water quality regulation and management** spells out the nature of an integrated approach to adaptive WQM and key policy framings of the integrated approach to regulation and adaptive management of water quality, including integrated, adaptive catchment planning, following a risk-based approach; and applying a hierarchy approach to decision-making. It addresses principles 3, 4, 5, 10, 11, 12 and 13.

**Chapter 3: Financing IWQM** examines the financial underpinnings of IWQM, looking at tools for financing the required actions, as well as the role of the private sector in this regard. It addresses principles 4, 6, 8 and 9.

**Chapter 4: Building the knowledge and capacity base** describes the policy with regard to the knowledge, human resource capacity and information base requirements to be able to implement the policy approaches. It addressed principles 4, 14 and 15.

It is tempting to believe that it is possible to follow a straight line from setting to achieving the desired objective, but in the real world this is never straightforward and the context is uncertain. Adaptive management therefore becomes a critical part of the process, necessitating ongoing monitoring and evaluation, and the periodic revision of the strategy and implementation plans.

Global good practice has shifted away from setting strategic plans with objectives to be set in a linear way. Global best practice in the private sector places less emphasis on sticking to a strategic plan than on building a rich and engaging corporate purpose; focuses less on formal structural design and more on effective management processes; is less concerned with controlling employees' behaviour than with developing their capabilities and broadening their perspective; and moves beyond the doctrine of strategy, structure and systems to a more organic model built on the development of purpose, process and people.

The challenge is to ensure that the IWQM strategy also builds the capability of people and institutions to manage in an adaptive and proactive manner that responds in a constructive way to the changing environment.

The strategic intent of the Policy and Strategy:

- Is aligned with the strategic objectives of the policy, while being consistent with broader water and development strategies (National Development Plan, NWRS2)
- Is focused on a short term timeframe, while building a platform for future strategies in line with the policy and visions for water quality management
- Prioritises a limited number of critical concerns, while ensuring that other issues are addressed through ongoing management or monitoring for future prioritisation
- Is relevant at national, catchment and local scales, while ensuring horizontal alignment across sectors and institutions at each scale
- Guides the actions/activities to be described in the implementation plans on a short-term basis
- Allows for adaptive response to changing circumstances and achievements based on effective ongoing monitoring and evaluation, during its timeframe.

The vision for WQM in South Africa is that government, in partnership with the private sector and civil society secure good water quality for all, forever.

The mission is to:

- Support a consistent interdepartmental approach to how water quality is managed in the country
- Support cooperation and integrated approaches to WQM across sectors, including civil society
- Adopt an adaptive management approach in which co-creation and co-learning by key players is entrenched
- Realise improvements in water quality in key systems
- Start to build capacity for longer-term improvement in water quality.

The goals of the WQM Policy and Strategy are:

Goal 1: Improved alignment of Policy, Strategy and legislation

Goal 2: Improved governance

Goal 3: Improved, efficient and effective WQM

Goal 4: Innovative finance

Goal 5: Improved knowledge and information management.

The goals are designed to address various strategic issues:

Goal 1: Improved alignment of Policy, Strategy and legislation

- Strategic issue 1: Harmonise policies and strategies to enable improved integrated WQM
- Strategic issue 2: Legislative review and amendments to enable integrated WQM

Goal 2: Improved governance

- Strategic issue 3: Improve integrated WQM institutional structuring
- Strategic issue 4: Formalise governance frameworks to support non-governmental engagements

Goal 3: Improved, efficient and effective WQM

- Strategic issue 5: Improve coordinated integrated planning
- Strategic issue 6: Strengthen integrated WQM regulation, compliance and enforcement
- Strategic issue 7: Applications of systems-based adaptive management approaches

Goal 4: Innovative finance

- Strategic issue 8: Improve and sustain fiscal support for integrated WQM
- Strategic issue 9: Develop pricing and incentive systems that support integrated WQM

Goal 5: Improved knowledge and information management

- Strategic issue 10: Strengthen monitoring and information management
- Strategic issue 11: Build water quality and WQM capacity through education, training and communication

Whilst there is a need to change our approach to WQM, it must be recognised that there is a well-conceived framework for WQM that needs to continue being implemented.

Implementation would involve:

- Fixing priority issues: This will provide the opportunity to realise success in addressing key issues and will embark on looking at rehabilitation or remediation in critical catchments. This will also entail looking at priority issues that can support the building of capacity and the on-going application of existing instruments.
- Building capacity: Whilst it is understood that the capacity that the water sector requires will not be in place within the short term, in terms of skills, integrated information and systems, this is an important issue that needs to be driven immediately and continued over time in order to build adaptive management capacity. This also includes the development of cooperative partnerships across government, private sector and civil society.
- Maintaining and sustaining the system: The on-going processes that the DWS has in place will continue to be utilised to manage water quality across the country. These instruments and systems may require strengthening over time. This could involve exploring ways in which to improve and simplify some of these instruments. This would include a drive to look at where instruments and systems can be integrated between departments in order to improve inter-departmental approaches.

**Discussion**

Linda Desmet (Palabora Copper) asked how the WQM Policy takes into account the environmental management system through NEMA. Ms Reddy responded that that would be linked to chapter 2, but the detail had not yet been included.

Marcus Selepe (IUCMA Manager) referred to the 15 principles and emphasised the importance of the link between data, information and governance (e.g. biomonitoring). In freeflowing water without infrastructure, fish are able to migrate from sea to headwater, but in areas where there is lots of infrastructure, fish ladders are needed to promote fish migration and completion of the reproduction cycle.

Robin Petersen (SANParks) observed that the emphasis seemed to be on the importance of water quantity for the environment, and there was less emphasis on the importance of water quality for the environment.

Mr Weston responded that other stakeholders had also commented that the focus seemed to be on water and sanitation.

Phindi Mlangeni (DWS SWSS) commented that if capacity was the biggest challenge to addressing water quality, the Strategy needed to provide an indication how this would be addressed.

Ronelle Putter (Irrigation Boards) commented that the proposed WQM Policy and IWQM Strategy were complex to understand, even for this group of informed stakeholders, and the man on the street was unlikely to understand.

## WORKSHOP 1: STRATEGIC ACTIONS: REVIEW AND PRIORITISATION

Workshop participants worked together in teams. The objectives were to:

- Review of the strategic action list and comment and add anything that they felt was missing in the table.
- List ten critical actions that need to be addressed in the province to address water quality and its management
- List three critical actions that need to be addressed nationally to address water quality and its management

Teams recorded their responses in the Strategic Actions Table (see Appendix 3).

## WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION

Workshop participants worked together in the same teams as for Workshop 1. The objectives were to answer the following questions for the ten provincial actions that they had prioritised in Workshop 1:

- What are the activities required to achieve these in the province?
- Who are the key actors and what roles do they play?
- How do we ensure implementation?

Teams recorded their responses on flipcharts, which were typed up as Appendix 4.

## FEEDBACK DISCUSSION

Teams had the opportunity to provide feedback to the workshop (Appendix 3 and 4).

The identified priorities were the harmonisation of policies and strategies, fiscal matters and capacity, in particular strengthening the ability to regulate.

## WAY FORWARD


This was the sixth of the provincial roadshow workshops. A workshop was scheduled in each province.

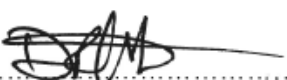
The next steps in the process were as follows:

- Gazette Edition 1 of WQM Policy for comment and further revise the Policy to produce Edition 2 (final edition) based on further inputs from wider stakeholder groups (and the public) and the outcomes of the IWQM Strategy development process.
- Develop IWQM Strategy Edition 2 and Implementation Priorities based on inputs from provincial workshops, inputs from project committees and inputs from focused discussions with key stakeholder groups
- National Inter-Departmental Workshop, scheduled for November or December 2016
- National Symposium, scheduled for April 2017.

## CLOSURE

Mr Weston thanked everyone for their attendance and valuable inputs. Mr Viljoen noted that the comments would be taken into account in preparing the IWQM Strategy edition 2. Participants were invited to submit any additional comments by email. The workshop closed at 15:00.

  
 .....  
 DWS Project Manager  
 Pieter Viljoen  
 Scientist Manager: Water Quality Planning

  
 .....  
 PSP Team Leader  
 Derek Weston  
 Associate Director: Pegasys

Date: 23/9/2017

Date: 17/01/2017

**APPENDIX 1: LIST OF ACRONYMS**

CMA	Catchment management agency
CME	Control monitoring and enforcement
CMF	Catchment management forum
CMS	Catchment management strategy
COGTA	Department of Cooperative Governance and Traditional Affairs
CSIR	Council for Scientific and Industrial Research
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
DRDLR	Department of Rural Development and Land Reform
DWS	Department of Water and Sanitation
EMI	Environmental management inspector
GN	
IDP	Integrated Development Plan
IUCMA	Inkomati-Usuthu Catchment Management Agency
IWQM	Integrated water quality management
KOBWA	Komati Basin Water Authority
KRIB	Komati River Irrigation Board
LRIB	Lomati River Irrigation Board
NEMA	National Environmental Management Act
NGO	Non-governmental organisation
NPA	National Prosecuting Authority
NWA	National Water Act
NWRS	National Water Resource Strategy
O&M	Operations and maintenance
OSD	Occupational specific dispensation
PGDS	Provincial Growth and Development Strategy
PSP	Professional service provider
RQO	Resource quality objective
SANBI	South African National Biodiversity Institute
SANParks	South African National Parks
SAPS	South African Police Service
SDG	Sustainable Development Goal
SWOT	Strengths, weaknesses, opportunities, threats
SWSS	Strategic Water Sector Support
UK	United Kingdom
UN	United Nations
WDCS	Waste Discharge Charge System
WISA	Water Institute of Southern Africa
WQM	Water quality management
WQMP	Water quality management plan
WRC	Water Research Commission
WSA	Water services authority
WSA	Water Services Act
WUL	Water use licence
WULA	Water use licence applications
WWTW	Wastewater treatment works

**APPENDIX 2: COMMENTS FOR THE COMMENTS REGISTER**

<b>Comment from Mpumalanga roadshow</b>	<b>Comment made by</b>
Sandmining is a huge problem and ought to be added to the list water quality problems. since sandmining is likely to continue, it would be useful to develop standards for this activity.	Linda Desmet (Palabora Copper) Robin Pietersen (SANParks)
Water user associations would have to be involved in all WQM initiatives for them to succeed.	Ronelle Putter (Irrigation Boards)
There is a need for training in legal aspects for officials (SAPS) on the ground.	Robin Petersen (SANParks)
The cumbersome process of issuing directives and notices makes it difficult to take rapid action against illegal activity.	Marcus Selepe (IUCMA Manager)
In areas where there is lots of infrastructure, fish ladders are needed to promote fish migration and completion of the reproduction cycle.	Marcus Selepe (IUCMA Manager)
If capacity is the biggest challenge to addressing water quality, the Strategy needs to provide an indication how this would be addressed.	Phindi Mlangeni (DWS SWSS)
The proposed WQM Policy and IWQM Strategy are complex to understand, even for informed stakeholders, and the man on the street is unlikely to understand.	Ronelle Putter (Irrigation Boards)

### APPENDIX 3: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 1 – STRATEGIC ACTIONS: REVIEW AND PRIORITISATION

T1: Linda Desmet (Palabora Copper), Mduduzi Nkuna (IUCMA), Patricia Mdhlovu (DWS Head Office), Phindi Mlangeni (DWS SWSS Pretoria), Adam Ramalisa (DWS IE WQM), Marcia Macapatle (DWS Mpumalanga)

T2: Yolanda Oosthuizen (SEMBCORP Silulumanzi), Deon Joubert (DWS Hydro Mpumalanga), Stephan Kitching (Jaco K Consulting), Nnzumbeni Tshikalange (DWS WQM), Rofhiwa Ramunenyiwa (IUCMA WQM), Zanele Maphumello (DWS WUE), Sydney Nkuna (DWS Mpumalanga), Martin Slabbert (Komati River Irrigation Board (KRIB) & LRIB)

T3: Ruth (?), Busi Mahlangu (IUCMA Control Environmental Officer), Portia Munyai (DWS IE WQM), Mmadi Moloto (Olifants Proto-CMA), Sakhiwe Nkomo (KOBWA), Caroline Tlowana (IUCMA), Isaac Tlagadi (Olifants Proto-CMA Environmental Officer)

T4: Marcus Selepe (IUCMA Manager), Adolph Mbetse (IUCMA WQM), Nthabiseng Ntoampe (Eskom), Thabang Mokgatle (Quality Engineering), Robert Davel (Mpumalanga Agri), Lutho Totsa (Eskom)

T5: Nokwanda Mhlanga (KOBWA), Betty Mnguni (Olifants Proto-CMA), Litshani Magoba (DWS), Musa Lubambo (Olifants Proto-CMA), Mokgadi Maloba (Olifants Proto-CMA), Hloniphekile Ayanda Madonsela (Olifants Proto-CMA), Nomadiba Lamani (DWS Environmental Officer), Percy Ratombo (DWS Environmental Officer), Samuel Maliaga (DWS Environmental Officer), Masala Nemubula (DWS Environmental Officer), Thabo Cecil Rasiuba (IUCMA Control Environmental Officer)

T6: DWS Head Office, KOBWA – probably Mercy Ralushai (DWS Geohydrology), Rasekhwela Kgaogela (DWS Strategy Coordination), Khanyiso Nkumanda (DWS Water Policy), Robin Pietersen (SANParks)

#### THE IWQM STRATEGIC OBJECTIVES

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
<b>STRATEGIC ISSUE 1:</b> Harmonization of Policies and Strategic to enable improved WQM	<b>SO1 a:</b> Policies and Strategies impacting upon IWQM are harmonized	T3: Updating of water quality policies (water quality guidelines and waste discharge standards) T4: DMR policy should be able to speak to CMA and DWS policies – protection and exploration of the resource T5: Yes, Consultation must take place from bottom up T6: How to monitor harmonisation of policies and strategies	T3: X T4: X T5: X T6: X	
<b>STRATEGIC ISSUE 2:</b> Legislative review and amendments to enable integrated WQM	<b>SO2a:</b> NWA/WSA effectively support integrated WQM	T2: The need for interaction between DEA, DMR and DWS T3: (1) The review period should be shortened (2) There should be an implementation plan (3) Spot fines should be in the Act T5: Amalgamation of the NWA/WSA T6: Make reference to the Act; state sections	T1: X T2: X T3: X	T6: X
	<b>SO2b:</b> Other legislation effectively supports integrated WQM	T3: (1) GN 704 (2) Water Services Act T6: How to determine relevance and applicability of other legislation	T2: X	T2: X T6: X
<b>STRATEGIC ISSUE 3:</b> Improved WQM institutional structuring	<b>SO3a:</b> DWS departmental structures support integrated WQM	T3: (1) Full structure on the proto-CMA (2) Fragmentation of functions (3) Thus the need for effective enforcement in CMA and proto-CMA	T1: X	T3: X



STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
		T6: Strengthen integrate participation		
	<b>SO3b:</b> Inter-sector departmental structures established to support integrated WQM	T3: (1) Partnership with external sectors to avoid working in silo (2) Knowledge sharing is crucial (3) Authorisation to be streamlined (4) Inter-sector departments (5) More cooperative governance T4: Include SAPS, NPA, Judiciary and local government	T1: X T4: X	
<b>STRATEGIC ISSUE 4:</b> Formalise governance frameworks to support non-governmental engagements	<b>SO4a:</b> Partnerships/stewardships established and maintained	T6: Sufficient	T3: X	T1: X T5: X T6: X
	<b>SO4b:</b> Governance framework for active citizenry formalized			T1: X T5: X
<b>STRATEGIC ISSUE 5:</b> Improved coordination in integrated planning	<b>SO5a:</b> Integrated sectoral planning approach is adopted at transboundary and national level	T3: Involvement of CMA in decision-making in terms of transboundary water resources T6: How to incorporate IWQM policies to accommodate transboundary issues	T6: X	
	<b>SO5b:</b> Integrated sectoral planning approach adopted in catchment/regional plans	T3: The regional office and CMA should facilitate T4: To include the planning task team to enforce attendance and accountability of all stakeholders (SO3b)		T4: X
<b>STRATEGIC ISSUE 6:</b> Strengthen IWQM Regulation, Compliance and Enforcement	<b>SO6a:</b> Licencing processes streamlined	T3: (1) Specialist should be at regional office and CMA (2) A structure that is clear with WULA only in CMA like other provinces T4: Need a modelling tool for assessing effluent policy impact on the resource T6: Sufficient	T5: X T6: X	T2: X T3: X T4: X
	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	T3: The regional must be the leader in planning in terms of CME. Head Office must come for support on request T5: Inclusion of SAPS and NPA for successful prosecution of transgressors	T6: X	T1: X T3: X
<b>STRATEGIC ISSUE 7:</b> Application of Systems-based Adaptive Management Approaches	<b>SO7a:</b> Adaptive systems-based management is applied at catchment level	T1: Make it more understandable; as it reads it is difficult to understand. It is so PSP (consultant language) T6: Concern with practicality of the adaptive system		T2: X T5: X T6: X
<b>STRATEGIC ISSUE 8:</b> Fiscal support for integrated	<b>SO8a:</b> WQM interventions are financially supported by the fiscus	T3: (1) The budget on rectification and remediation must be with CMA and proto-CMA (2) Clearly defined strategy	T1: X T2: X	T3: X T4: X

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
WQM		T4: (1) Local municipalities to account on Projects and Sewage works and the performance of Sewage Works (2) Develop Sewage Works T6: Sufficient	T5: X	
<b>STRATEGIC ISSUE 9:</b> Develop pricing and incentives that support integrated WQM	<b>SO9a:</b> The Waste Discharge Charge System is implemented	T3: Waste Discharge Charge System: legislation must be amended; implementation plan is needed T4: To include industry and mining T5: Additional tax for waste back into the resource T6: Clarity on plan of implementation	T3: X T5: X	T1: X
	<b>SO9b:</b> Mechanisms for incentivising good practice developed		T3: X	T1: X
<b>STRATEGIC ISSUE 10:</b> Strengthen Monitoring and Information Management	<b>SO10a:</b> An integrated and functioning WQ monitoring network	T3: A central monitoring system is needed (inter-sectoral departments) T5: (1) Real-time monitoring of our resources (2) Use latest technology for better efficiency T6: Integration of monitoring to avoid duplication. Submission to same	T6: X	T1: X T2: X T5: X
	<b>SO10b:</b> Information systems that are current and accessible to support adaptive WQM	T3: A system that is accessible, quick, web-based T4: Finalise the development of Information Management System	T4: X	T1: X T4: X
	<b>SO10c:</b> Routine assessments inform adaptive WQM	T3: Verify results of water quality		
<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	T2: Senior national official law enforcer must also be educated and capacitated T3: Citizens must be educated T4: Possibility of developing environmental courts and guidelines for SAPS and NPA T6: Sufficient	T2: X T5: X	T2: X T3: X T4: X T6: X
	<b>SO11b:</b> WQM decisions are underpinned by best practice, research and innovation	T3: Sharing of research outcomes by institutions T4: Provide more funds towards skills retention		T1: X
	<b>SO11c:</b> A well informed and actively engaged South Africa	T3: Skills		T1: X T2: X T5: X

**General Comments:**

## APPENDIX 4: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION

T1: Linda Desmet (Palabora Copper), Mduduzi Nkuna (IUCMA), Patricia Mdhlovu (DWS Head Office), Phindi Mlangeni (DWS SWSS Pretoria), Adam Ramalisa (DWS IE WQM), Marcia Macapatle (DWS Mpumalanga)

	Strategic issue/objective	Activities	Key actors
1	<b>STRATEGIC ISSUE 4:</b> Formalise governance frameworks to support non-governmental engagements	<ul style="list-style-type: none"> <li>Finalise the CMAs and have strategy in place</li> <li>Identify key sectors in the catchment</li> <li>Consolidate catchment forums to have one 'powerful forum'</li> <li>Use social media technologies for stakeholder engagement</li> <li>Empower stakeholders (water stewardship/catchment stewardship)</li> <li>Citizen-driven action</li> <li>Financial incentives</li> </ul>	
2	<b>STRATEGIC ISSUE 6:</b> Strengthen IWQM Regulation, Compliance and Enforcement	<ul style="list-style-type: none"> <li>Give delegation back to CMAs</li> <li>Capacitate SAPS (law enforcement agencies)</li> <li>Give more legal power to enforcement officials (e.g. power to issue spot fine)</li> </ul>	
3	<b>STRATEGIC ISSUE 9:</b> Develop pricing and incentives that support integrated WQM	<ul style="list-style-type: none"> <li>Waste discharge charge system needs to be implemented urgently at catchment level</li> </ul>	
4	<b>STRATEGIC ISSUE 10:</b> Strengthen Monitoring and Information Management	<ul style="list-style-type: none"> <li>Urgently finalise the establishment of the CMAs</li> <li>Have a transparent and accessible system</li> <li>Ensure data are captured</li> <li>Capacitate officials</li> </ul>	
5	<b>STRATEGIC ISSUE 1:</b> Harmonization of Policies and Strategic to enable improved WQM	<ul style="list-style-type: none"> <li>Capacity and training for effective investigation of environmental crimes</li> <li>Environmental awareness</li> <li>Capacitate and empower stakeholders on water resource management</li> </ul>	

T2: Yolanda Oosthuizen (SEMBCORP Silulumanzi), Deon Joubert (DWS Hydro Mpumalanga), Stephan Kitching (Jaco K Consulting), Nnzumbeni Tshikalange (DWS WQM), Rofhiwa Ramunenyiwa (IUCMA WQM), Zanele Maphumello (DWS WUE), Sydney Nkuna (DWS Mpumalanga), Martin Slabbert (Komati River Irrigation Board (KRIB) & LRIB)

	Strategic issue/objective	Activities	Key actors
1	<b>SO5b:</b> Integrated sectoral planning approach adopted in catchment/regional plans	<ul style="list-style-type: none"> <li>Identify key provincial role players</li> <li>Identify the relevant responsibility in terms of WQM</li> </ul>	CMAs Water boards Local government COGTA Provincial government

	Strategic issue/objective	Activities	Key actors
		<ul style="list-style-type: none"> <li>Planning</li> <li>Implementation</li> <li>Monitoring and reporting</li> </ul>	Industries NGOs
2	<b>SO7a:</b> Adaptive systems-based management is applied at catchment level	<ul style="list-style-type: none"> <li>Prioritise challenges/risk-based process</li> <li>Action plan for the highest risk</li> </ul>	CMAs
3	<b>SO10a:</b> An integrated and functioning WQ monitoring network	<ul style="list-style-type: none"> <li>Identify overlaps and duplication</li> <li>Share and cooperate</li> </ul>	CMAs
4	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	<ul style="list-style-type: none"> <li>Absorb more skilled people and succession plan</li> <li>Continuous training of personnel</li> <li>Financial support</li> </ul>	CMAs and DWS
5	<b>SO11c:</b> A well informed and actively engaged South Africa	<ul style="list-style-type: none"> <li>Public awareness campaigns</li> <li>Officials forums</li> <li>Media publications</li> </ul>	All role players identified

T3: Ruth (?), Busi Mahlangu (IUCMA Control Environmental Officer), Portia Munyai (DWS IE WQM), Mmadi Moloto (Olifants Proto-CMA), Sakhiwe Nkomo (KOBWA), Caroline Tlowana (IUCMA), Isaac Tlagadi (Olifants Proto-CMA Environmental Officer)

	Strategic objective	Activities	Key actors
1	<b>STRATEGIC ISSUE 3:</b> Improved WQM institutional structuring	<ul style="list-style-type: none"> <li>Integration of ground and surface water monitoring</li> <li>Management to be done at CMA level (fragmentation of functions)</li> </ul>	
2	<b>STRATEGIC ISSUE 6:</b> Strengthen IWQM Regulation, Compliance and Enforcement	<ul style="list-style-type: none"> <li>Specialist should be placed at CMA/proto-CMA level</li> <li>Delegation of issuing of licences must be at catchment level</li> <li>Fully fledged structure to deal with authorisation only in the CMA/proto-CMA</li> <li>The Regional Office <u>must</u> be the leader. The National Office must support on request</li> <li><u>EMI (environmental management inspectors) training</u></li> <li>Capacitate law enforcement bodies (e.g. NPA and SAPS on environmental crimes)</li> </ul>	
3	<b>STRATEGIC ISSUE 8:</b> Fiscal support for	<ul style="list-style-type: none"> <li>The budget on</li> </ul>	

	Strategic objective	Activities	Key actors
	integrated WQM	rectification and remediation must be with the CMA/proto-CMA and it must be clearly defined in the strategy	
4	<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<ul style="list-style-type: none"> <li>Capacitate citizens on waste management (e.g. littering leads to water pollution)</li> <li>Scare skills in WQM (OSD review) must be retained</li> <li>Communication must be both ways (top to bottom, bottom to top)</li> <li>Sharing of research outcome by institutions</li> </ul>	

T4: Marcus Selepe (IUCMA Manager), Adolph Mbetse (IUCMA WQM), Nthabiseng Ntoampe (Eskom), Thabang Mokgatle (Quality Engineering), Robert Davel (Mpumalanga Agri), Lutho Totsa (Eskom)

	Strategic objective	Activities	Key actors
1	<b>SO5b:</b> Integrated sectoral planning approach adopted in catchment/regional plans	<ul style="list-style-type: none"> <li>Alignment of IDP, CMS and PGDS</li> </ul>	
2	<b>SO6a:</b> Licencing processes streamlined	<ul style="list-style-type: none"> <li>Need a modelling tool for assessing effluent quality impact on the water resource</li> </ul>	
3	<b>SO8a:</b> WQM interventions are financially supported by the fiscus	<ul style="list-style-type: none"> <li>Municipalities to account to the inter-departmental structure on WWTW projects and performance of the WWTW</li> <li>Municipal IDP to allocate funds for water quality projects</li> </ul>	
4	<b>SO10b:</b> Information systems that are current and accessible to support adaptive WQM	<ul style="list-style-type: none"> <li>Finalise the development of information management system; the data can be used effectively for planning</li> </ul>	
5	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	<ul style="list-style-type: none"> <li>Capacity building for SAPS, NPA and Judiciary</li> <li>Possibility of environmental courts development</li> <li>Employees skills development</li> </ul>	

T5: Nokwanda Mhlanga (KOBWA), Betty Mnguni (Olifants Proto-CMA), Litshani Magoba (DWS), Musa Lubambo (Olifants Proto-CMA), Mokgadi Maloba (Olifants Proto-CMA), Hloniphekile Ayanda Madonsela (Olifants Proto-CMA), Nomadiba Lamani (DWS Environmental Officer), Percy Ratombo (DWS Environmental Officer), Samuel Maliaga (DWS Environmental Officer), Masala Nemubula (DWS Environmental Officer), Thabo Cecil Rasiuba (IUCMA Control Environmental Officer)

	Strategic issue/objective	Activities	Key actors
1	<b>SO4a:</b> Partnerships/stewardships established and maintained	<ul style="list-style-type: none"> <li>Establishment/reestablishment of existing/past CMFs</li> <li></li> </ul>	
	<b>SO4b:</b> Governance framework for active citizenry formalized		
2	<b>SO7a:</b> Adaptive systems-based management is applied at catchment level	<ul style="list-style-type: none"> <li>Regular meetings to check progress and deficits in the approach</li> <li>Continual review of approach</li> <li>Adaptive catchment management strategy</li> </ul>	
3	<b>SO10a:</b> An integrated and functioning WQ monitoring network	<ul style="list-style-type: none"> <li>Update our current WQMP to the current situation on the ground. Look at adding additional monitoring points and parameters</li> <li>Use the best available technologies to increase efficiency (real-time monitoring)</li> <li>Adaptable lab contract</li> <li>Checking for emerging pollutants at an ad hoc level to check if there is a need to add them to current monitoring</li> </ul>	
	<b>SO10b:</b> Information systems that are current and accessible to support adaptive WQM		
	<b>SO10c:</b> Routine assessments inform adaptive WQM		
4	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	<ul style="list-style-type: none"> <li>Quality accredited short courses/training</li> <li>Practicals must be included as part of training</li> <li>Continuous improvement on information used to implement WQM</li> <li>In licensing we need to find ways to use scientific tools to understand the assimilative capacity of the water resources. This will help with the maintenance of RQOs and river classification</li> <li>Partnerships with research institutions (SANBI, CSIR, WRC etc.). Results should be implemented into the daily running of the Department</li> <li>Awareness campaigns on the statuses of our water resources</li> <li>Stewardship in terms of water resources</li> <li>Partake in international conference to learn from other countries</li> </ul>	
	<b>SO11b:</b> WQM decisions are underpinned by best practice, research and innovation		
	<b>SO11c:</b> A well informed and actively engaged South Africa		

T6: DWS Head Office, KOBWA – possibly Mercy Ralushai (DWS Geohydrology), Rasekhwela Kgaogela (DWS Strategy Coordination), Khanyiso Nkumanda (DWS Water Policy), Robin Pietersen (SANParks)

Did not submit recommendations related to implications for implementation.





## DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS) - WP10978

### Implications of the WQM Policy and IWQM Strategy for Implementation

#### Regional Workshop: Limpopo

4<sup>th</sup> November 2016 | Polokwane | 09h00 – 15h45

### AGENDA

**Chairperson:** TBA

**Purpose of Meeting:**

- To create awareness regarding the WQM Policy and the IWQM Strategy;
- To obtain comments and inputs into the WQM Policy and the IWQM Strategy;
- To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;
- To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and
- To outline the way forward.

Item	Time	Topic	Responsible
	09h00 – 09h30	Arrival Tea and Coffee	
1	09h30 – 09h50	Welcome, Introductions and Purpose of the Meeting	Chair
2	09h50 – 10h30	Background to Water Quality Management in SA <ul style="list-style-type: none"><li>▪ <i>History, Issues and Challenges</i></li><li>▪ <i>Discussion on Regional Context</i></li></ul>	DWS Project Team
3	10h30 – 11h30	Development of the IWQM Strategy <ul style="list-style-type: none"><li>▪ <i>WQM Policy Responses</i></li><li>▪ <i>IWQM Strategic Responses</i></li><li>▪ <i>Discussion</i></li></ul>	Pegasys
4	11h30 – 12h45	<b>Workshop 1: Prioritisation of Strategic Actions</b>	Facilitator: Pegasys
	12h45 - 13h30	Lunch	
5	13h30 – 14h45	<b>Workshop 1: Implications for Implementation</b>	Facilitator: Pegasys
7	14h45 – 15h10	Feedback Discussion	Project Team
8	15h10 – 15h30	Way forward and Closure	Chair



**water & sanitation**  
 Department:  
 Water and Sanitation  
 REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF WATER AND SANITATION  
 DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS)  
 (WP10978)  
 MINUTES OF ROADSHOW WORKSHOP**

**Date:** 4 November 2016  
**Time:** 09:00–13:20  
**Venue:** Bolivia Lodge, Polokwane

**Present:**

Robert Bologo	ASA Metals
Faith Mugivhi	AvDE Consulting
Kai Petty	COGHSTA
MP Lekoane	De Beers
Thembinkosi Ndou	DWS
Donald Mabada	DWS CAO
Ramaano Masibigiri	DWS CME EOSP
Marencia Mashilo	DWS IGR
NS Mello	DWS IOM
Motlogonang Maeosele	DWS Limpopo
Adolph Maredi	DWS Limpopo
Joseph Phasha	DWS LPNW Proto-CMA
Ben Sengani	DWS P&I
Damaris Thotse	DWS P&I
Moses Maletse	DWS Regional Office
Regina Kganyago	DWS Strategy
Kenneth Makhubele	DWS SWSS
Margaret Matide	DWS Water Sector Regulation
Molly Maluleke	DWS WRPS & WQP
Lebo Mosoa	Eskom
Mpho Sinthumule	Eskom
Tshiphiwa Matamela	Exxaro Coal Mine
Anthony Dikgale	IVA Plats
Baloyi Khanamola	Joint Water Forum
Ansia de Jager	Joint Water Forum
Jakes Louw	Joint Water Forum
Pieter Viljoen	LDARD
Solomon Monyepao	LEDET
A Letsoalo	LEDET
MC Mphahlele	LEDET
PD Mathole	Lepelle Northern Water
Lebo Sebola	Lephalale Municipality
Lekwato Marakalala	Lephalale Sub-catchment
Ngoako William Moremi	Lephalale Sub-catchment
Nkele Lodgina Ditsela	Letaba Water User Association
Andre Venter	LIM 368
Manamela Lehabo	LIM 368
Mokgadi Thobejane	LIM 368
Sandra Ramaphala	Lower Mogalakwena Sub-catchment
Matshamaite Gilbert	Luvuvhu CMF
ER Kutama	Luvuvhu CMF
MIR Bohego	Makhado Catchment
Nebonde Dominick	Mogalakwena
Thema Maishibe	Mogalakwena CMA
Hlengwane Joseph Nkhona	Mogalakwena Mine
Calvin Shiburi	

Richard Nemaungani	Mutale CMA
Patrick Muthelo	Mutale CMF
Modikwa Motibane	NAFU
Doyoyo Farani	Naledzi Environmental Consulting
Matsenene Thendo	Naledzi Environmental Consulting
Nembahe Aluweni	Naledzi Environmental Consulting
Ramathieleza Ronald	Naledzi Environmental Consulting
Shitlhangu Aaron	Naledzi Environmental Consulting
Sithabusiwe Ncube	Naledzi Environmental Consulting
Ndou Africa	Naledzi Water Works
Sepadi Motau	North West Proto-CMA
CJ Emmerich	Nzheleke/Nwandi CMF
Moses Mudau	Nzheleke/Nwandi CMF
Alidzulwi Mudau	Office of the Premier
Derek Weston	Pegasys
Traci Reddy	Pegasys
Salome Sathekge	Polokwane Municipality
Robyn Arnold	Project team
Letsatsi Chuene	Sand Catchment Management Forum
Joseph Sara	University of Limpopo
Kris Bal	University of Limpopo
Freeman Chauke	Vele Colliery
Jacques Willemse	Vhembe WUA/ Werpe Farmers Union

## WELCOME, INTRODUCTIONS AND PURPOSE OF THE MEETING

Mr Mello (DWS IGR) opened the meeting and welcomed everyone. Mr Mabada (DWS) welcomed everyone on behalf of Acting Chief Director who was attending an Economic Summit. The interest shown by the many people present was very encouraging. The purpose of the workshop was to create awareness of the WQM Policy and IWQM Strategy and obtain comments and inputs to shape the policy. After adoption of the policy, it would have to be implemented by the broader sectors of water users. Mr Mello emphasised the importance of the water cycle. He encouraged robust engagement at the workshop.

Mr Mello allowed a round of introductions. He noted that the policy must reflect the aspirations of users and encouraged everyone to participate in commenting on the WQM Policy and IWQM Strategy.

Mr Viljoen emphasised that the development of the WQM Policy and IWQM Strategy was not a departmental but a sector initiative. There had been efforts to deal with water quality in South Africa since the passing of the 1919 Irrigation Act, which required the irrigation on land of water containing waste in response to massive urbanisation. Industrial growth and urbanisation were still problems in the country. The 1956 Water Act required treating waste to the appropriate standards and putting it back in the river, motivated by the need for water in a water-scarce country. The 1991 Water Quality Management Policies and Strategies in the RSA looked at receiving water quality objectives to protect the users of water. The 1998 National Water Act still governs the management of water but is under review. After a decade of water quality management, there were challenges related to new development and room for improvement. The challenge was to consider different ways of managing water. Einstein once said that we cannot expect a different outcome if we keep doing the same thing. The workshop should tackle the challenge of considering what could be done differently to make a positive difference to water quality management in order to better serve the public. Everyone has a responsibility with respect to WQM.

Mr Weston noted that the purpose of the meeting was to:

- Create awareness regarding the WQM Policy and the IWQM Strategy
- Obtain comments and inputs into the WQM Policy and the IWQM Strategy
- Initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the water management areas
- Solicit initial inputs for the conversion of the IWQM Policy and the IWQM Strategy into practice

- Outline the way forward

## **BACKGROUND TO WATER QUALITY MANAGEMENT IN SOUTH AFRICA**

Mr Weston gave a presentation on the background to water quality management in South Africa.

South Africa is faced with many of the problems related to poor water quality; this may be attributed to the vast number of challenges we face with managing the various sources of pollution, including air pollution, agricultural drift and run-off, industrial wastewater discharges, urban run-off, and challenge with managing run-off from unserved areas, mine water and sewage water.

Many factors contribute to the WQM challenges, including:

- Sources of water pollution are complex. There are varying sources of pollution (point source, diffuse) and water quality changes along the hydrological regime.
- Catchments are complex socio-economic systems, and some are shared watercourses: Sufficiently integrated and adaptive approaches within and across catchments should be implemented, which is currently lacking.
- Sufficient alignment and coordination is needed within and between government departments. WQM is hampered by poor coordination and conflicting approaches.
- There is insufficient finance for WQM. The available financial resources are insufficient and do not recognise the investment required to counteract economic harm.
- There is insufficient data and information management: Data sharing is a challenge, including transboundary-management. There is a challenge in ensuring that the public has access to information.
- There are capacity and skills constraints in the field of WQM

In response to the country's need to take an improved integrated approach to WQM, DWS has initiated a project to develop a national, integrated Water Quality Management (WQM) Strategy, but before the strategy could be developed the current WQM policies, which were needed in order to give direction to the strategy, would require revision. This is due to the fact that whilst innovative at the time of publication, the current policies (Water Quality Management Policies and Strategies in the RSA in 1991 and the 2006 Resource Directed Management of Water Quality Policy) are dated and not integrated, and need to be aligned with the current overarching policy and legislative frameworks, socio-economic trends and emerging global issues.

The contract for the project was signed on 4 October 2015 and would continue until September 2017. The project comprises five phases: Inception, Assessment, Policy, Strategy and Policy into Practice. The policy and strategy were being developed through an iterative process, whereby first editions of the policy and strategy would be sent out for comment, and would be amended in response to the comments received. The project was currently in the Strategy phase, which spanned from August 2016 until February 2017, which entailed revise, update & integrate existing WQM strategies based on inputs from Stakeholders & assessment phase

All documents produced were available on the DWS project website ([www.dws.gov.za/projects/iwqms](http://www.dws.gov.za/projects/iwqms)). The following documents had been completed to date:

- Inception Report
- Review of WQM Policies and Strategies
- Review of WQM Institutional Arrangements
- Review of WQM Instruments
- Note on the WQM Challenges
- Water Quality Glossary
- Capacity Building Strategy
- Stakeholder Communication Strategy
- Newsletters 1 and 2
- Note on the WQM Policy Principles
- WQM Policy (Edition 1)
- Note on the Strategic Framework

The identified water quality issues that need to be addressed through the WQM Policy and Strategy include: salinisation, nutrient enrichment and eutrophication, acidification and acid mine drainage, erosion and sedimentation, urban runoff pollution, litter and solid waste, microbial pollution, waterborne pathogens and human health, agrochemicals and toxic substances, dissolved oxygen and organic pollution, trace metals, hydrocarbon pollution, thermal pollution, nanoparticles and radioactivity.

There is already considerable knowledge and understanding of many of the priority water quality issues (e.g. eutrophication, salinisation) but many of the issues need more research (e.g. the impact of nanoparticles, metals, hydrocarbons and agrochemicals).

Impacts on water quality by industry, mining, municipalities, mining and urban wash-off were considered, and the following issues were identified:

- Municipalities: lack of maintenance of wastewater infrastructure, inappropriate technologies, 'unsexy' infrastructure, the need for financial incentives to attract industry, lack of enforcement, lack of ownership by affected communities, lack of appropriate bylaws, lack of adequate / appropriate urban planning, understanding of mandates is confused, capacity challenges, insufficient resourcing, labour challenges, poor budgeting/ not ring-fencing budgets, lack of political support, politically embarrassing, poor understanding of importance, unsustainable financial model, rapid urbanisation, supply trumps quality
- Industry: not meeting discharge standards in municipal environments, legacy water quality issues, wastewater treatment works (WWTW) technology inappropriate, municipalities treat industry as source of revenue, WWTW removes incentives to pre-treat, WDCA on hold, political pressure to attract industry, no incentives to treat, transfers responsibility to meet standards to local municipalities, lack of trust between industry and government, lack of enforcement, inappropriate licence conditions, lack of capacity, ineffective monitoring, limited communication, poor cooperative governance
- Agriculture: poor land use practices, over-irrigation, over-fertilisation, over-abstraction, varying contexts (e.g. small vs commercial, communal), extension services weak, poor enforcement, capacity challenges, dispersed spatial nature of agriculture, lack of financial resources, lack of accountability by both government and farmers, jobs trump environment and water quality, not understood to be a priority, poor cooperative governance
- Urban wash-off: degradation of wetlands, canalisation of rivers and the degradation of riparian areas and developments in floodplains; lack of maintenance of infrastructure; rapid growth in poorly serviced peri-urban dense settlements; lack of ownership by society; lack of enforcement and lack of bylaws; mindset of not needing to treat; lack of adequate / appropriate urban planning; understanding of mandates is confused; capacity challenges; insufficient resourcing, and spend requirements are huge; lack of political support; poor understanding of importance; rapid urbanisation; unsustainable financial model
- Mining: Existing mines not meeting water quality discharge standards; government facing significant challenges in managing impact of abandoned mines; uncertainty around mine closure funds and meeting new closure requirements; insufficient control monitoring and enforcement function at DWS (at national through to local level, also linked to capacity to implement, know-how to hold someone accountable and ability to write proper licence conditions); Weak technical capacity, with water quality officers not knowing how they fit in, inaccurate water use licences, not sure how to enforce, cannot read and interpret water data, lack of knowledge around protected areas or understanding what that really means; Political interference in establishment of mines (e.g. unlicensed mines, establishment of mining in areas that are protected, competing mandates, short-term benefit overshadows long term sustainability); poor cooperative governance and mismatch in departmental mandates; insufficient financial resources

Future trends that with implications for water quality are anticipated to be: climate change, hydraulic fracturing, renewable energy, water–energy–food security nexus, growth of inadequately serviced densely populated settlements and water re-use.

A SWOT analysis identified 28 strengths, 62 weaknesses, 32 opportunities and 45 threats. The following priority actions are proposed in order to respond to the SWOT analysis:

1. Promote integration of water quality and quantity
2. Formalise cooperative governance structures, processes and resources for water quality regulatory actions

3. Formally address overlaps of statutory/regulatory/oversight mandates that affect WQM
4. Formalise institutional/legal framework for intervention in municipalities with failing water and sanitation functions
5. Strategy and plan for sectoral partnerships and public–private partnerships
6. Rolling engagement with DWS senior management on WQM
7. Rolling public engagement on joint custodianship of the resource
8. Intensify WQM capacity development across sectors
9. Overhaul all aspects of water quality monitoring and data management
10. Intensify all aspects of control monitoring and enforcement
11. Mobilise ex-DWS budget funding of WQM initiatives.

In the international context, good quality water is the foundation for achieving the UN Sustainable Development Goals (SDGs) and further drives the need for an integrated WQM Policy and Strategy for South Africa, for example:

- Goal 1 & 2: No hunger – good water quality is required for the rural and agricultural sector for food production, which is a crucial step in poverty reduction
- Goal 6: Clean water and sanitation
- Goal 14: Life below water speaks to the health of our aquatic systems, which is fundamentally dependent on certain water quality requirements and is affected by changes in water quality.

The literature review of the international experience of WQM identified a number of trends:

#### Strategic alignment

- Water quality problems are increasingly shifting to non-point sources related to failing infrastructure
- Basin water quality rehabilitation and management is a long-term process requiring institutional capacity and financial sustainability, within broader water resources management
- Water resources crisis provides an opportunity to gain political will and momentum, but needs to be sustained
- Catchment WQM requires a combination of technical, regulatory, economic, financial and institutional interventions
- Influencing government financing mechanisms provides a critical means of enabling water quality action
- The SDG indicator process provides an opportunity to address water quality issues.

#### Coherent instruments

- Regulatory and strategic approaches are increasingly focusing on minimising pollution by being stringent on priority sectors
- Clean tech supported by green economy initiatives and financing mechanisms provides targeted ways of reducing pollution at source
- Coherent regulatory regimes and strategic institutional approaches supported by appropriate financial mechanisms and cooperative actions
- Natural (green) infrastructure is recognised as critical aspect of integrated management of water quality in urban and rural settings
- Various economic (and financial) approaches have been attempted, the selection of which should be depend on the individual context and may be targeted
- Good water quality monitoring enables enforcement and compliance, but this can be incrementally developed and funded.

#### Partnerships

- Government needs to play a lead role in driving, coordinating and often financing the remediation, and not always just water quality managers
- Building long-term partnerships is fundamental to sustained and effective local solutions
- Basin institutions lead catchment rehabilitation/protection , through a range of rural and urban measures
- Alignment and consistency is an emerging challenge that requires cooperative governance and regulatory/strategic approaches (vertical and horizontal)
- Private sector has a crucial role to play in minimising its impacts on water resources, and collaborating through water stewardship partnerships

- Civil society has a key role

## Discussion

Kai Petty (AvDE Consulting) commented that licensed mines or projects are required meet water parameters; sometimes they do and sometimes they do not, but generally they try very hard to and create jobs. Yet activities are not licensed and therefore not monitored. People use rivers as they do not have basic services. These are not only problems in Limpopo but also in other provinces with similar levels of infrastructure.

Mr Weston responded that there was too much illegal and unauthorised water use; one of the associated issues was that it took too long to issue water use licences.

Letsatsi Chuene (Sand Catchment Management Forum) appealed to DWS to work together with other government departments (especially DEA) and catchment management forums to address the problem of pollution. He emphasised that DWS should involve catchment management forums in all water related initiatives to resolve the problems. Rural villages, farmers and the irrigation sector all need water. Partnerships are important for water resource management.

Mr Weston made a plea for civil society engagement.

Jacques Willemse (Vhembe WUA/ Werpe Farmers Union) enquired whether there were any dam building strategies to address the broader picture of water resource management, including floods.

CJ Emmerich (Nzheleke/Nwandi CMF) asked how serious the problem of sedimentation in the two dams on the area was, since stakeholders often ask this question at Catchment Management Forum (CMF) meetings. Sedimentation affects the amount of water availability as well as water quality.

Mr Weston suggested that Mr Emmerich address the question separately to Ms Mosoa (DWS Water Resource and Water Quality Planning).

## DEVELOPMENT OF THE IWQM STRATEGY

Ms Reddy gave a presentation on the development of the IWQM Strategy.

A series of steps was followed in developing the WQM Policy and Strategy:

- Outcome 1: Consensus on prioritised water quality issues was preceded by a high-level description a prioritisation of water quality issues
- Outcome 2: Identification of WQM challenges and gaps was preceded by a root cause analysis, insights from a literature review and WQM SWOT analysis
- Outcome 3: Foundation for policy, strategy processes was preceded by the consolidation and way forward.

The core concept of the WQM Policy is that water quality affects the economy and society's well-being. Water quality is a developmental issue. DWS is the sector leader in WQM, but everyone has a role to play, and a joint approach between government departments, the private sector (through initiatives such as the Strategic Water Partners Network) and civil society forms the basis of tackling the water quality challenges facing the country.

The Policy is a collation of existing policies as they relate to WQM, with stakeholder inputs and a literature survey used to identify gaps. It draws on the 1991 Water Quality Management Policies and Strategies in the RSA, the 2006 Resource Directed Management of Water Quality Policy, the National Development Plan, the National Water Act (NWA), the National Water Resource Strategy, the UN Sustainable Development Goals (Agenda 2063), current DWS policies and other departmental policies, including those of the DMR, DEA, DAFF and DRDLR. It was developed based on the information from the Assessment phase, inputs from the project committees, and importantly, inputs from stakeholder discussions. It strengthens existing policy, but also proposes several new positions, the largest being that WQM need to be an inter-governmental responsibility, with DWS as the sector leader. It is hoped that further consultations will strengthen the policy even more.

The aim of the WQM Policy is to:

- Elevate water quality and water quality management on the country's agenda.
- Formalise and institutionalise a common approach to water quality management in South Africa.
- Support a consistent inter-departmental approach to how water quality is managed in the country.
- Support cooperative and integrated approaches to water quality management across sectors.
- Address operational aspects such as taking an integrated approach, broadening finance mechanisms and improving knowledge and information in the execution of the water quality management function.
- Provide a framework to realise improvements in water quality in key systems.
- Guide the development of an IWQM Strategy.

The WQM principles, Policy and Strategy are aligned in the following way:

- The principles establish the fundamental norms, rules, or values that represent what is desirable to the country in terms of WQM. Principles form the foundation on which the policy is developed.
- The Policy provides the overall vision and framework for how water quality should be managed in South Africa for at least, the next two decades.
- The Strategy describes the prioritised strategic actions that need to take place over a five year horizon to realise the WQM envisaged by the policy, together with the enabling environment.
- The implementation plan describes, roles, responsibilities, timeframes and resource requirements to achieve the strategic actions.
- The roll-out of the implementation plan involves monitoring and reporting on implementation performance and the effect the Policy and Strategy implementation has had on water resources.

The 15 policy principles developed in the initial phase were structured around the four areas of governance, economic and finance, operational, and data and information. Several of the policy principles were new in respect of their application to WQM, namely those that are underlined in the following list:

- Governance
  - Principle 1: Government-wide water quality management
  - Principle 2: Subsidiarity and accountability
  - Principle 3: Transboundary water quality management
  - Principle 4: Partnerships
  - Principle 5: Administrative fairness and implementability
  - Principle 6: Administrative penalties (administered by DWS, not through the justice system)
- Economic and finance
  - Principle 7: Water quality is a developmental issue
  - Principle 8: Broadened funding principles
  - Principle 9: Polluter pays
- Operational
  - Principle 10: An integrated and adaptive approach
  - Principle 11: Hierarchies of water use and pollution management decision-making
  - Principle 12: Green/ecological infrastructure restoration and rehabilitation
  - Principle 13: Risk-based approach
- Data and information
  - Principle 14: Collection and protection of data
  - Principle 15: Publicly available information

The Policy is divided into four chapters, each of which describes the problem/challenge that needs to be resolved through the policy; the response to mitigate the challenge; and the principles to be adopted in responding to the challenge. The four chapters are:

- Chapter A: Inclusive WQM for South Africa
- Chapter B: Integrated, adaptive water quality regulation and management
- Chapter C: Financing IWQM
- Chapter D: Building the knowledge and capacity base

**Chapter A: Inclusive WQM for South Africa** deals with the need to see/understand the impact of water quality on the socio-economic and ecological development in the country; the need for an intra-



and inter-departmental response to the WQM challenges in the country; some of the key policy aspects that must be addressed in achieving such an approach; and the need to build partnerships between government departments, civil society and the private sector in order to be able to successfully address the challenges. It addresses principles 1, 2, 4 and 7.

**Chapter 2: Integrated, adaptive water quality regulation and management** spells out the nature of an integrated approach to adaptive WQM and key policy framings of the integrated approach to regulation and adaptive management of water quality, including integrated, adaptive catchment planning, following a risk-based approach; and applying a hierarchy approach to decision-making. It addresses principles 3, 4, 5, 10, 11, 12 and 13.

**Chapter 3: Financing IWQM** examines the financial underpinnings of IWQM, looking at tools for financing the required actions, as well as the role of the private sector in this regard. It addresses principles 4, 6, 8 and 9.

**Chapter 4: Building the knowledge and capacity base** describes the policy with regard to the knowledge, human resource capacity and information base requirements to be able to implement the policy approaches. It addressed principles 4, 14 and 15.

It is tempting to believe that it is possible to follow a straight line from setting to achieving the desired objective, but in the real world this is never straightforward and the context is uncertain. Adaptive management therefore becomes a critical part of the process, necessitating ongoing monitoring and evaluation, and the periodic revision of the strategy and implementation plans.

Global good practice has shifted away from setting strategic plans with objectives to be set in a linear way. Global best practice in the private sector places less emphasis on sticking to a strategic plan than on building a rich and engaging corporate purpose; focuses less on formal structural design and more on effective management processes; is less concerned with controlling employees' behaviour than with developing their capabilities and broadening their perspective; and moves beyond the doctrine of strategy, structure and systems to a more organic model built on the development of purpose, process and people.

The challenge is to ensure that the IWQM strategy also builds the capability of people and institutions to manage in an adaptive and proactive manner that responds in a constructive way to the changing environment.

The strategic intent of the Policy and Strategy:

- Is aligned with the strategic objectives of the policy, while being consistent with broader water and development strategies (National Development Plan, NWRS2)
- Is focused on a short term timeframe, while building a platform for future strategies in line with the policy and visions for water quality management
- Prioritises a limited number of critical concerns, while ensuring that other issues are addressed through ongoing management or monitoring for future prioritisation
- Is relevant at national, catchment and local scales, while ensuring horizontal alignment across sectors and institutions at each scale
- Guides the actions/activities to be described in the implementation plans on a short-term basis
- Allows for adaptive response to changing circumstances and achievements based on effective ongoing monitoring and evaluation, during its timeframe.

The vision for WQM in South Africa is that government, in partnership with the private sector and civil society secure good water quality for all, forever.

The mission is to:

- Support a consistent interdepartmental approach to how water quality is managed in the country
- Support cooperation and integrated approaches to WQM across sectors, including civil society
- Adopt an adaptive management approach in which co-creation and co-learning by key players is entrenched
- Realise improvements in water quality in key systems
- Start to build capacity for longer-term improvement in water quality.

The goals of the WQM Policy and Strategy are:

Goal 1: Improved alignment of Policy, Strategy and legislation

Goal 2: Improved governance

Goal 3: Improved, efficient and effective WQM

Goal 4: Innovative finance

Goal 5: Improved knowledge and information management.

The goals are designed to address various strategic issues:

Goal 1: Improved alignment of Policy, Strategy and legislation

- Strategic issue 1: Harmonise policies and strategies to enable improved integrated WQM
- Strategic issue 2: Legislative review and amendments to enable integrated WQM

Goal 2: Improved governance

- Strategic issue 3: Improve integrated WQM institutional structuring
- Strategic issue 4: Formalise governance frameworks to support non-governmental engagements

Goal 3: Improved, efficient and effective WQM

- Strategic issue 5: Improve coordinated integrated planning
- Strategic issue 6: Strengthen integrated WQM regulation, compliance and enforcement
- Strategic issue 7: Applications of systems-based adaptive management approaches

Goal 4: Innovative finance

- Strategic issue 8: Improve and sustain fiscal support for integrated WQM
- Strategic issue 9: Develop pricing and incentive systems that support integrated WQM

Goal 5: Improved knowledge and information management.

- Strategic issue 10: Strengthen monitoring and information management
- Strategic issue 11: Build water quality and WQM capacity through education, training and communication

Whilst there is a need to change our approach to WQM, it must be recognised that there is a well-conceived framework for WQM that needs to continue being implemented.

Implementation would involve:

- Fixing priority issues: This will provide the opportunity to realise success in addressing key issues and will embark on looking at rehabilitation or remediation in critical catchments. This will also entail looking at priority issues that can support the building of capacity and the on-going application of existing instruments.
- Building capacity: Whilst it is understood that the capacity that the water sector requires will not be in place within the short term, in terms of skills, integrated information and systems, this is an important issue that needs to be driven immediately and continued over time in order to build adaptive management capacity. This also includes the development of cooperative partnerships across government, private sector and civil society.
- Maintaining and sustaining the system: The on-going processes that the DWS has in place will continue to be utilised to manage water quality across the country. These instruments and systems may require strengthening over time. This could involve exploring ways in which to improve and simplify some of these instruments. This would include a drive to look at where instruments and systems can be integrated between departments in order to improve inter-departmental approaches.

## Discussion

Lebo Sebola (Lepelle Northern Water) referred to Goal 3: Improved, efficient and effective WQM and asked whether integrating WSA systems had been considered (e.g. Blue Drop/ Green Drop). These systems are expensive for municipalities to implement, and they may not have the budget for everything that the systems expect them to monitor. She recommended integrating systems so as to make the information more readily available.

Thembinkosi Ndou (De Beers) asked how the IWQM Strategy would ensure effective alignment of WQM with neighbouring countries.

Mr Weston responded that such alignment was done largely by acting in an advisory role. The SADC Water Protocol requires the harmonisation of water resource management instruments among member countries.

Ramaano Masibigiri (DWS CAO) enquired about (1) linkages between WQM policies and implementation, and relevant environmental laws, and asked how (2) individual members of civil society would be involved in contributing to water quality.

Mr Weston responded that the intention was to involve both organised and individual civil society. The Strategic Water Partners Network, for example, brings civil society into public spaces.

Mr Viljoen commented that the Water Research Commission is running innovative projects, including one on citizen-based transboundary information and awareness-raising and building databases using citizen data. A miniSASS program has been developed on which private citizens, communities and schools could upload data to the website. The South African Weather Service had rationalised the rain gauges, which had resulted in a decrease in rain gauge meters. The rainfall data needed for hydrological yield models can be uploaded by private citizens, farmers and mines. Such initiatives contribute not only awareness but also to integration. Children become aware and interested in the environment. Mr Viljoen would like to see a #PoorWaterQualityMustFall movement. Ratepayers pay their municipal rates and assume that the municipality is managing the water quality properly, yet they never visit the waste water treatment works. Poor quality water that goes downstream becomes the problem of those that live downstream.

## **WORKSHOP 1: STRATEGIC ACTIONS: REVIEW AND PRIORITISATION**

Workshop participants worked together in teams. The objectives were to:

- Review of the strategic action list and comment and add anything that they felt was missing in the table.
- List ten critical actions that need to be addressed in the province to address water quality and its management
- List three critical actions that need to be addressed nationally to address water quality and its management

Teams recorded their responses in the Strategic Actions Table (see Appendix 3).

## **WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION**

Workshop participants worked together in the same teams as for Workshop 1. The objectives were to answer the following questions for the ten provincial actions that they had prioritised in Workshop 1:

- What are the activities required to achieve these in the province?
- Who are the key actors and what roles do they play?
- How do we ensure implementation?

Teams recorded their responses in on flipcharts, which were typed up as Appendix 4.

## **FEEDBACK DISCUSSION**

Teams had the opportunity to provide feedback to the workshop (Appendix 3 and 4).

The common themes identified as priorities by the various groups were related to monitoring and regulation, institutional issues, capacity and professionalisation.

## **WAY FORWARD**


This was the seventh of the provincial roadshow workshops. A workshop was scheduled in each province.


The next steps in the process were as follows:

- Gazette Edition 1 of WQM Policy for comment and further revise the Policy to produce Edition 2 (final edition) based on further inputs from wider stakeholder groups (and the public) and the outcomes of the IWQM Strategy development process.
- Develop IWQM Strategy Edition 2 and Implementation Priorities based on inputs from provincial workshops, inputs from project committees and inputs from focused discussions with key stakeholder groups
- National Inter-Departmental Workshop, scheduled for November or December 2016
- National Symposium, scheduled for April 2017.

## CLOSURE

Mr Weston thanked everyone for their enthusiastic participation in the workshop sessions. Mr Mello assured participants that their comments had been captured and that the process of engagement would continue. Policies are critical for shaping society, and water quality is catalytic to socioeconomic development. Mr Mabada thanked everyone for their inputs and closed the workshop at 13:20.

  
 .....  
 DWS Project Manager  
 Pieter Viljoen  
 Scientist Manager: Water Quality Planning

  
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 PSP Team Leader  
 Derek Weston  
 Associate Director: Pegasys

Date: 29/01/2017

Date: 17/01/2017

**APPENDIX 1: LIST OF ACRONYMS**

CMA	Catchment management agency
CME	Control monitoring and enforcement
CMF	Catchment management forum
COGHSTA	Co-operative Governance, Human Settlements and Traditional Affairs
COGTA	Department of Cooperative Governance and Traditional Affairs
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
DRDLR	Department of Rural Development and Land Reform
DWS	Department of Water and Sanitation
IDP	Integrated Development Plan
IWQM	Integrated water quality management
LDARD	Limpopo Department of Agriculture and Rural Development
LEDET	Limpopo Department of Economic Development, Environment and Tourism
NAFU	National African Farmers' Union
NGO	Non-governmental organisation
NWA	National Water Act
NWRS	National Water Resource Strategy
O&M	Operations and maintenance
PUCMA	Pongola-Umzimkulu Catchment Management Agency
RQO	Resource quality objective
SADC	Southern African Development Community
SAPS	South African Police Service
SDG	Sustainable Development Goal
SWOT	Strengths, weaknesses, opportunities, threats
UK	United Kingdom
UN	United Nations
WDCS	Waste Discharge Charge System
WISA	Water Institute of Southern Africa
WQM	Water quality management
WRC	Water Research Commission
WSA	Water services authority
WSA	Water Services Act
WUA	Water user association
WUL	Water use licence
WULA	Water use licence applications
WWTW	Wastewater treatment works

**APPENDIX 2: COMMENTS FOR THE COMMENTS REGISTER**

<b>Comment from Limpopo roadshow</b>	<b>Comment made by</b>
Mines try to meet the water quality parameters. They are a positive factor in creating jobs. A more serious issue for water quality is that people pollute rivers as they do not have basic services.	Kai Petty (AvDE Consulting)
Information systems need to be integrated to make the information more readily available. Information from systems such as the Blue and Green Drop also needs to be integrated.	Lebo Sebola (Lepelle Northern Water) r

### APPENDIX 3: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 1 – STRATEGIC ACTIONS: REVIEW AND PRIORITISATION

T1: Members not indicated

T2: Members not indicated

T3: Naledzi Environmental Consulting

T4: Moses Mudau (Nzheleke/Nwandi CMF), CJ Emmerich (Nzheleke/Nwandi CMF), Jacques Willemse (Vhembe WUA/ Werpe Farmers Union), Faith Mugivhi (ASA Metals), Salome Sathekge (Polokwane Municipality), Robert Bologo

T5: Members not indicated

T6: Mpho Sinthumule (Eskom), Richard Nemaungani (Mutale CMA), Patrick Muthelo (Mutale CMF), Thembinkosi Ndou (De Beers), Molly Maluleke (DWS Water Sector Regulation), Sepadi Motau (NW Proto-CMA)

T7: Members not indicated

T8: Members not indicated

T9: Members not indicated

#### THE IWQM STRATEGIC OBJECTIVES

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
<b>Strategic Issue 1:</b> Harmonization of Policies and Strategic to enable improved WQM	<b>SO1 a:</b> Policies and Strategies impacting upon IWQM are harmonized	<p>T1: Strengthening collaboration, communication and share information amongst the department</p> <p>T2: Strengthening of partnerships between catchment forums, municipalities and sector departments. Policies and strategies to be clear</p> <p>T3: DWS should come together nationally to agree on the best method of waste water treatment plant (septic/package plant)</p> <p>T5: More interaction between sector and departments on an earlier level. Involve more departments and relevant stakeholders at grassroots level</p> <p>T6: Effectively outline the role of communities in the policies. Policies are developed on national level and implemented provincially</p> <p>T8: Start somewhere, not in harmonisation of policies (community/public). From here, what are we going to tell a layman?</p>	<p>T1: X</p> <p>T2: X</p> <p>T3: X</p> <p>T6: X</p> <p>T7: X</p> <p>T8: X</p>	<p>T2: X</p> <p>T6: X</p> <p>T8: X</p>
<b>STRATEGIC ISSUE 2:</b> Legislative review and amendments to enable integrated WQM	<b>SO2a:</b> NWA/WSA effectively support integrated WQM	<p>T2: Agreed</p> <p>T3: Effective monitoring and inspection to check the water quality</p> <p>T5: Trickle down from grassroots plus vice versa</p> <p>T7: Add NEMA to integrate in WQM</p> <p>T8: Reviewing legislative process is a long process/difficult –</p>	<p>T2: X</p> <p>T5: X</p> <p>T6: X</p> <p>T8: X</p>	<p>T2: X</p> <p>T8: X</p>

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
		reason – may be decision-makers e.g. review of water powers and function		
	<b>SO2b:</b> Other legislation effectively supports integrated WQM	<b>T2: Agreed</b> <b>T3 WQM should also take into consideration groundwater sources (i.e. boreholes), not only surface water (rivers, dams, lakes etc.)</b> <b>T5: Include guidelines to timeframes and responsibilities. Revisit the conditions of licences to comply with water quality guidelines</b> <b>T9: Question is how effective legislation can be imposed on those at grassroots level e.g. informal settlements cannot be fined for misuse of water. However, the municipality can be fined for not making or taking the time to inform informal settlements of the impacts of misusing water resources. When seeking and granting water usage permits that both parties must meet the deadline and be fined should the permit not be granted in the time stipulated in the guidelines</b>	T6: X	
<b>STRATEGIC ISSUE 3:</b> Improved WQM institutional structuring	<b>SO3a:</b> DWS departmental structures support integrated WQM	<b>T1: Improve collaboration, communication and feedback</b> <b>T2: CMA forums to be established and functional</b>	T6: X	<b>T1: X</b> <b>T2: X</b>
	<b>SO3b:</b> Inter-sector departmental structures established to support integrated WQM	<b>T1: Disaster Management Support WQM</b> <b>T2: Structures existing, however need to be strengthened</b> <b>T6: Feed information into the WMS</b>		<b>T2: X</b>
<b>STRATEGIC ISSUE 4:</b> Formalise governance frameworks to support non-governmental engagements	<b>SO4a:</b> Partnerships/stewardships established and maintained	<b>T1: The programmes are good. DWS to develop fair and equal partnerships</b> <b>T2: Partnerships established and monitored, but need more resources</b> <b>T6: Stewardships for the policy to give more responsibility to community members/leaders in terms of promoting water quality management. The strategy is currently run by the department and some stakeholders</b>	<b>T1: X</b> <b>T6: X</b>	T6: X
	<b>SO4b:</b> Governance framework for active citizenry formalized	<b>T2: Governance framework formalised and functional</b> <b>T5: More feedback after meetings. More transparency</b>		<b>T2: X</b>
<b>STRATEGIC ISSUE 5:</b> Improved coordination in integrated planning	<b>SO5a:</b> Integrated sectoral planning approach is adopted at transboundary and national level	<b>T2: Agree, however it differs from one area to another</b> <b>T8: Integrated planning – happening e.g. through IDPs, APP, but the how part within institutions is different e.g. implementation of</b>	<b>T7: X</b>	



STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
		infrastructure projects		
	<b>SO5b:</b> Integrated sectoral planning approach adopted in catchment/regional plans	<b>T2:</b> Integrated planning needs to be adopted up to the level of traditional leaders		T6: X
<b>STRATEGIC ISSUE 6:</b> Strengthen IWQM Regulation, Compliance and Enforcement	<b>SO6a:</b> Licencing processes streamlined	<b>T1:</b> Systems are there but need improvement <b>T2:</b> Agree <b>T3:</b> DWS should reduce number of days taken to issue the water use licence in order to avoid non-compliance by developers <b>T5:</b> Guideline documents to assist in deadlines. Platform accessible for everyone with regard to allocation of water <b>T6:</b> Specify timeframes for water use licensing. Licences issued at national level <b>T8:</b> Create a platform that will allow future stakeholders e.g. 'potential business' access to information on water usage and allocation	<b>T2:</b> X <b>T3:</b> X <b>T5:</b> X <b>T6:</b> X	<b>T1:</b> X <b>T5:</b> X <b>T7:</b> X
	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	<b>T1:</b> Enforcement is there, but not effective because of conflicting by-laws in municipalities <b>T2:</b> Agree, compliance to be enforced <b>T5:</b> Strengthen capacity building for physical monitoring <b>T6:</b> Compliance is mostly targeted to big sectors e.g. mining, farming. Local municipalities can as well become key polluting sectors if the rate of polluting is high. More emphasis to be put on ensuring compliance at local municipalities	<b>T5:</b> X <b>T6:</b> X	<b>T5:</b> X <b>T6:</b> X
<b>STRATEGIC ISSUE 7:</b> Application of Systems-based Adaptive Management Approaches	<b>SO7a:</b> Adaptive systems-based management is applied at catchment level	<b>T2:</b> Agree		
<b>STRATEGIC ISSUE 8:</b> Fiscal support for integrated WQM	<b>SO8a:</b> WQM interventions are financially supported by the fiscus	<b>T2:</b> Agree <b>T5:</b> More transparency. Not limited to WRC. Tertiary institution initiatives	<b>T5:</b> X <b>T7:</b> X	
<b>STRATEGIC ISSUE 9:</b> Develop pricing and incentives that support integrated WQM	<b>SO9a:</b> The Waste Discharge Charge System is implemented	<b>T2:</b> Agree <b>T6:</b> Implement in key catchments. Develop action plan for pricing <b>T7:</b> Before 21F for discharge is approved, proof to be provided that recycle option has been exhausted/ is feasible		<b>T4:</b> X <b>T6:</b> X <b>T7:</b> X

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
	<b>SO9b:</b> Mechanisms for incentivising good practice developed	T2: Agree		
<b>STRATEGIC ISSUE 10:</b> Strengthen Monitoring and Information Management	<b>SO10a:</b> An integrated and functioning WQ monitoring network	T1: DWS to strengthen national and catchment water quality monitoring networks T2: Agree T3: DWS should ensure that private boreholes should be registered and monitored the same way as business boreholes T5: Maintaining databases	T1: X	T4: X
	<b>SO10b:</b> Information systems that are current and accessible to support adaptive WQM	T2: Agree	T1: X	T4: X T5: X
	<b>SO10c:</b> Routine assessments inform adaptive WQM	T2: Agree		T5: X
<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	T1: The capacity building is good e.g. Youth in Water, water quality management courses, workshops T2: Agree T6: Emphasis to be put on community water quality management awareness through campaigns, community meetings, workshops and schools. Consider making water education compulsory for every child at school T8: WQM language should start at primary school level – University of Limpopo (particularly). Awareness – voicing at different levels of public participation/ community	T6: X (development of material) T8: X	T1: X T4: X T5: X T6: X (implementation) T7: X T8: X
	<b>SO11b:</b> WQM decisions are underpinned by best practice, research and innovation	T1: Not implementing best practices. We need to improve our decisions based on thorough research and innovation T2: Agree		T1: X T4: X T5: X
	<b>SO11c:</b> A well informed and actively engaged South Africa	T1: We need to have awareness campaigns e.g. in Venda, awareness programmes go through the king T2: Agree		T4: X

**General Comments:**

## APPENDIX 4: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION

T1: Members not indicated

	Strategic issue/objective	Activities	Key actors
	<b>National</b>		
1	<b>STRATEGIC ISSUE 1:</b> Harmonization of Policies and Strategic to enable improved WQM	Strengthening collaboration and communication Share information amongst the departments	
2	<b>STRATEGIC ISSUE 4:</b> Formalise governance frameworks to support non-governmental engagements	<b>Strategic objective 4a:</b> The programmes are good. DWS to develop fair and equal partnerships	DWS
3	<b>STRATEGIC ISSUE 10:</b> Strengthen Monitoring and Information Management	<b>Strategic objective 10a:</b> DWS to strengthen national and catchment water quality monitoring networks	DWS
	<b>Provincial</b>		
1	<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<b>Strategic objective 11a:</b> The capacity building is good e.g. Youth in water pricing, water quality management courses, workshops <b>Strategic objective 11b:</b> <b>NOT</b> implementing best practices. We need to improve our decisions based on thorough research and innovation <b>Strategic objective 11c:</b> No we need to have awareness campaigns e.g. in Venda awareness campaigns go through the king	
2	<b>STRATEGIC ISSUE 6:</b> Strengthen IWQM Regulation, Compliance and Enforcement	<b>Strategic objective 6a:</b> The systems are there but need improvement <b>Strategic objective 6b:</b> Enforcement is there, but not effective because of conflicting by-laws in municipalities. Capacitate the municipalities	
3	<b>STRATEGIC ISSUE 3:</b> Improved WQM institutional structuring	<b>Strategic objective 3a:</b> Improve collaboration, communication and feedback <b>Strategic objective 3b:</b> Disaster management support WQM	

T2: Members not indicated

	Strategic issue/objective	Activities	Key actors
1	<b>SA2</b>	Sector departments to harmonise policies and strategies to support IWQM	
2	<b>SA9</b>	Develop the institutional	

	Strategic issue/objective	Activities	Key actors
		protocols to enable DWS intervention in municipalities regarding discharges from failing	
3	SA29	DWS, DEA to develop a targeted approach for the enforcement of regulation	
4	SA14	DWS with DEA and CMAs to support and drive functional platforms for the engagement of civil society nationally and within catchments	

## T3: Naledzi Environmental Consulting

National		Provincial	
Problems	Solutions	Problems	Solutions
Groundwater monitoring	DWS should employ personnel responsible for monitoring groundwater, specifically awareness on registering personal boreholes	Limpopo – municipality water should be up to standards (Blue Drop/ Green Drop)	Professional personnel should be employed in the treatment plans (DWS/ Public Works)
DWS to state what is the nationally acceptable waste water treatment plant way (septic/package)		Monitoring of waste water treatment plants in Limpopo	DWS should strictly exercise or implement all the monitoring conditions stipulated in the authorisation (DWS)
		Maintenance of waste water treatment plants in Limpopo	Audits should be undertaken to ensure that funds allocated towards maintenance of all treatments plants is used accordingly

T4: Moses Mudau (Nzheleke/Nwandi CMF), CJ Emmerich (Nzheleke/Nwandi CMF), Jacques Willemse (Vhembe WUA/ Werpe Farmers Union), Faith Mugivhi (ASA Metals), Salome Sathekge (Polokwane Municipality), Robert Bologo

	Provincial strategic objective	Activities	Key actors
1	SO9a: The Waste Discharge Charge System is implemented	<ul style="list-style-type: none"> <li>DWS and CMA to develop action plan to support implementation of waste charge</li> <li>Implementing incentive initiatives strategies</li> <li>Develop legislation that will address non-compliance issues e.g. polluters</li> </ul>	
2	SO10a: An integrated and functioning WQ monitoring network	<ul style="list-style-type: none"> <li>All stakeholders must engage in committees like water user associations, CMF, CMA and DWS</li> <li>Risk monitoring to be developed above normal monitoring. Identification</li> </ul>	

	Provincial strategic objective	Activities	Key actors
		of problematic constituents. DWS to monitor based on the data/results	
3	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	<ul style="list-style-type: none"> <li>• Provide training e.g. bursaries, training, workshops (both rural and urban areas)</li> <li>• Capacity building to communities, farmers, councillors</li> <li>• DWS to support research on new innovations and technologies</li> </ul>	

## T5: Members not indicated

	Strategic issue/objective	Activities	Key actors
1	<b>SO5b:</b> Integrated sectoral planning approach adopted in catchment/regional plans	<ul style="list-style-type: none"> <li>• More officers employed</li> <li>• More water quality analyses performed on a regular basis</li> <li>• More effective assistance during application procedures</li> </ul>	
2	<b>STRATEGIC ISSUE 10:</b> Strengthen Monitoring and Information Management	<ul style="list-style-type: none"> <li>• Establish and maintain stakeholder databases</li> <li>• Clearance certificate for land transfer with regard towards ownership e.g. of water</li> </ul>	
3	<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<ul style="list-style-type: none"> <li>• Roadshows towards schools</li> </ul>	

## T7: Members not indicated

	Strategic issue/objective	Activities	Key actors
1	<b>SO6a:</b> Licencing processes streamlined <b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	<ul style="list-style-type: none"> <li>• Reduce time for processing of water use licence applications (WULA)</li> <li>• Introduce WULA submission meeting</li> <li>• Setting of RQOs to take consideration of baseline water quality</li> </ul>	
2	<b>STRATEGIC ISSUE 9:</b> Develop pricing and incentives that support integrated WQM	<ul style="list-style-type: none"> <li>• Fast-track the implementation of waste discharge</li> <li>• Before 21F for discharge is approved, provide proof that recycling options have been exhausted/ are feasible</li> </ul>	
3	<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<ul style="list-style-type: none"> <li>• Conduct more WQM workshops</li> <li>• Appointment of more personnel with</li> </ul>	

	<b>Strategic issue/objective</b>	<b>Activities</b>	<b>Key actors</b>
		specialised skills	

T8: Members not indicated

	<b>Strategic issue/objective</b>	<b>Activities</b>	<b>Key actors</b>
1	<b>STRATEGIC ISSUE 1:</b> Harmonization of Policies and Strategic to enable improved WQM	<ul style="list-style-type: none"> <li>Public participation before development of policies/strategies/Acts</li> </ul>	All relevant stakeholders should for part, not DWS only
2	<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<ul style="list-style-type: none"> <li>DWS in conjunction with educational institutions should develop capacity building programmes</li> </ul>	
3	<b>STRATEGIC ISSUE 2:</b> Legislative review and amendments to enable integrated WQM	<ul style="list-style-type: none"> <li>Through inputs from Province, DWS together with Exco (stakeholder involvement)</li> </ul>	



## DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS) - WP10978

### Implications of the WQM Policy and IWQM Strategy for Implementation

#### Regional Workshop: Western Cape

9<sup>th</sup> November | Protea Hotel Stellenbosch | 09h00 – 15h45

### AGENDA

**Chairperson:** Provincial Chair/P. Viljoen

**Purpose of Meeting:**

- To create awareness regarding the WQM Policy and the IWQM Strategy;
- To obtain comments and inputs into the WQM Policy and the IWQM Strategy;
- To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;
- To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and
- To outline the way forward.

Item	Time	Topic	Responsible
	09h00 – 09h30	Arrival Tea and Coffee	
1	09h30 – 09h50	Welcome, Introductions and Purpose of the Meeting	Chair
2	09h50 – 10h30	Background to Water Quality Management in SA <ul style="list-style-type: none"><li>▪ <i>History, Issues and Challenges</i></li><li>▪ <i>Discussion on Regional Context</i></li></ul>	DWS Project Team
3	10h30 – 11h30	Development of the IWQM Strategy <ul style="list-style-type: none"><li>▪ <i>WQM Policy Responses</i></li><li>▪ <i>IWQM Strategic Responses</i></li><li>▪ Discussion</li></ul>	Pegasys
4	11h30 – 12h45	<b>Workshop 1: Strategic Actions: Review and Prioritisation</b>	Facilitator: Pegasys
	12h45 - 13h30	Lunch	
5	13h30 – 14h45	<b>Workshop 2: Implications for Implementation</b>	Facilitator: Pegasys
7	14h45 – 15h10	Feedback Discussion	Pegasys
8	15h10 – 15h30	Way forward and Closure	Chair



**water & sanitation**  
 Department:  
 Water and Sanitation  
 REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF WATER AND SANITATION  
 DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS)  
 (WP10978)  
 MINUTES OF ROADSHOW WORKSHOP**

**Date:** 9 November 2016

**Time:** 09:00–15:15

**Venue:** Protea Hotel, Technopark, Stellenbosch

**Present:**

Carolyn Howell	ARC
Reckson Mulidzi	ARC
Nico Rossouw	Aurecon
Patrick van Coller	BGCMA
Phumla Ngqumshe	Bitou Local Municipality
Richard Nell	City of Cape Town
Linda Rossouw	Consultant
Jonas Mphepya	DEA
Annabel Marian Horn	DEA&DP (BRIP)
Juan Hugo	DEA&DP (BRIP)
Marlé Kunneke	DEA&DP (BRIP)
Wilna Kloppers	DEA&DP (PCM)
Izak Toerien	Department Local Government
Pieter Viljoen	DWS
Sibusiso Maseko	DWS Institutional Oversight HO
Felicia Nemathaga	DWS RPW Mines
Melissa Lintnaar-Strauss	DWS Western Cape
Michiel Meets	Eco-Owl Consulting
Bridget Fundikwa	Green Cape
Gareth McConkey	Jantech CC
Irene Waller	La Bri
Tiahnah-Leigh Gobel	Living Lands
Derek Weston	Pegasys
Traci Reddy	Pegasys
Robyn Arnold	Project team
Elizabeth Were	See Saw (probably)
Adriaan Kurtz	Stellenbosch Municipality
Esmari Steenkamp	Swartland Municipality
Johan de Jager	Vin Pro
Rudolph Rescher	Western Cape Department of Agriculture
Lydia van Rooyen	Wildlands
Adriaan Oelofse	Winetech
Anel Andrag	Winetech
Derick Kellerman	Xylem

**Apologies:**

Candice Haskins      City of Cape Town

**WELCOME, INTRODUCTIONS AND PURPOSE OF THE MEETING**

Mr Viljoen opened the meeting and welcomed everyone on behalf of the provincial office and reassured stakeholders that DWS was in the region in order to help. The development of an IWQM Strategy was intended as an intersectoral and interdepartmental project.

South Africa has had legislation governing water quality since the 1919 Irrigation Act, which was promulgated in response to the growing challenges to water quality from urbanisation, and required



the irrigation of waste water on to land. The 1956 Water Act changed the approach to require the treatment of water to acceptable quality and putting it back in the river, taking water scarcity into account. Despite the promulgation of the National Water Act in 1998, there are still problems with water quality. Today we still face the challenges of urbanisation, which puts strain on both the quality and quantity of water resources. Einstein said that we cannot expect different outcomes if we continue to do things in the same way.

This is a stakeholder meeting not a public participation meeting. There will be public participation meetings to allow public comment on the policy once it has been gazetted. Stakeholders should focus on informing DWS and the project team of any important aspects that the strategy may have missed. Mr Viljoen allowed a round of introductions.

Mr Weston noted that the purpose of the meeting was to:

- Create awareness regarding the WQM Policy and the IWQM Strategy
- Obtain comments and inputs into the WQM Policy and the IWQM Strategy
- Initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the water management areas
- Solicit initial inputs for the conversion of the IWQM Policy and the IWQM Strategy into practice
- Outline the way forward

## **BACKGROUND TO WATER QUALITY MANAGEMENT IN SOUTH AFRICA**

Mr Weston gave a presentation on the background to water quality management in South Africa.

South Africa is faced with many of the problems related to poor water quality; this may be attributed to the vast number of challenges we face with managing the various sources of pollution, including air pollution, agricultural drift and run-off, industrial wastewater discharges, urban run-off, and challenge with managing run-off from unserved areas, mine water and sewage water.

Many factors contribute to the WQM challenges, including:

- Sources of water pollution are complex. There are varying sources of pollution (point source, diffuse) and water quality changes along the hydrological regime.
- Catchments are complex socio-economic systems, and some are shared watercourses: Sufficiently integrated and adaptive approaches within and across catchments should be implemented, which is currently lacking.
- Sufficient alignment and coordination is needed within and between government departments. WQM is hampered by poor coordination and conflicting approaches.
- There is insufficient finance for WQM. The available financial resources are insufficient and do not recognise the investment required to counteract economic harm.
- There is insufficient data and information management: Data sharing is a challenge, including transboundary-management. There is a challenge in ensuring that the public has access to information.
- There are capacity and skills constraints in the field of WQM

In response to the country's need to take an improved integrated approach to WQM, DWS has initiated a project to develop a national, integrated Water Quality Management (WQM) Strategy, but before the strategy could be developed the current WQM policies, which were needed in order to give direction to the strategy, would require revision. This is due to the fact that whilst innovative at the time of publication, the current policies (Water Quality Management Policies and Strategies in the RSA in 1991 and the 2006 Resource Directed Management of Water Quality Policy) are dated and not integrated, and need to be aligned with the current overarching policy and legislative frameworks, socio-economic trends and emerging global issues.

The contract for the project was signed on 4 October 2015 and would continue until September 2017. The project comprises five phases: Inception, Assessment, Policy, Strategy and Policy into Practice. The policy and strategy were being developed through an iterative process, whereby first editions of the policy and strategy would be sent out for comment, and would be amended in response to the comments received. The project was currently in the Strategy phase, which spanned from August 2016 until February 2017, which entailed revise, update & integrate existing WQM strategies based on inputs from Stakeholders & assessment phase

All documents produced were available on the DWS project website ([www.dws.gov.za/projects/iwqms](http://www.dws.gov.za/projects/iwqms)). The following documents had been completed to date:

- Inception Report
- Review of WQM Policies and Strategies
- Review of WQM Institutional Arrangements
- Review of WQM Instruments
- Note on the WQM Challenges
- Water Quality Glossary
- Capacity Building Strategy
- Stakeholder Communication Strategy
- Newsletters 1 and 2
- Note on the WQM Policy Principles
- WQM Policy (Edition 1)
- Note on the Strategic Framework

The identified water quality issues that need to be addressed through the WQM Policy and Strategy include: salinisation, nutrient enrichment and eutrophication, acidification and acid mine drainage, erosion and sedimentation, urban runoff pollution, litter and solid waste, microbial pollution, waterborne pathogens and human health, agrochemicals and toxic substances, dissolved oxygen and organic pollution, trace metals, hydrocarbon pollution, thermal pollution, nanoparticles and radioactivity.

There is already considerable knowledge and understanding of many of the priority water quality issues (e.g. eutrophication, salinisation) but many of the issues need more research (e.g. the impact of nanoparticles, metals, hydrocarbons and agrichemicals).

Impacts on water quality by industry, mining, municipalities, mining and urban wash-off were considered, and the following issues were identified:

- Municipalities: lack of maintenance of wastewater infrastructure, inappropriate technologies, 'unsexy' infrastructure, the need for financial incentives to attract industry, lack of enforcement, lack of ownership by affected communities, lack of appropriate bylaws, lack of adequate / appropriate urban planning, understanding of mandates is confused, capacity challenges, insufficient resourcing, labour challenges, poor budgeting/ not ring-fencing budgets, lack of political support, politically embarrassing, poor understanding of importance, unsustainable financial model, rapid urbanisation, supply trumps quality
- Industry: not meeting discharge standards in municipal environments, legacy water quality issues, wastewater treatment works (WWTW) technology inappropriate, municipalities treat industry as source of revenue, WWTW removes incentives to pre-treat, WDCA on hold, political pressure to attract industry, no incentives to treat, transfers responsibility to meet standards to local municipalities, lack of trust between industry and government, lack of enforcement, inappropriate licence conditions, lack of capacity, ineffective monitoring, limited communication, poor cooperative governance
- Agriculture: poor land use practices, over-irrigation, over-fertilisation, over-abstraction, varying contexts (e.g. small vs commercial, communal), extension services weak, poor enforcement, capacity challenges, dispersed spatial nature of agriculture, lack of financial resources, lack of accountability by both government and farmers, jobs trump environment and water quality, not understood to be a priority, poor cooperative governance
- Urban wash-off: degradation of wetlands, canalisation of rivers and the degradation of riparian areas and developments in floodplains; lack of maintenance of infrastructure; rapid growth in poorly serviced peri-urban dense settlements; lack of ownership by society; lack of enforcement and lack of bylaws; mindset of not needing to treat; lack of adequate / appropriate urban planning; understanding of mandates is confused; capacity challenges; insufficient resourcing, and spend requirements are huge; lack of political support; poor understanding of importance; rapid urbanisation; unsustainable financial model
- Mining: Existing mines not meeting water quality discharge standards; government facing significant challenges in managing impact of abandoned mines; uncertainty around mine closure funds and meeting new closure requirements; insufficient control monitoring and enforcement function at DWS (at national through to local level, also linked to capacity to implement, know-how

to hold someone accountable and ability to write proper licence conditions); Weak technical capacity, with water quality officers not knowing how they fit in, inaccurate water use licences, not sure how to enforce, cannot read and interpret water data, lack of knowledge around protected areas or understanding what that really means; Political interference in establishment of mines (e.g. unlicensed mines, establishment of mining in areas that are protected, competing mandates, short-term benefit overshadows long term sustainability); poor cooperative governance and mismatch in departmental mandates; insufficient financial resources

Future trends that with implications for water quality are anticipated to be: climate change, hydraulic fracturing, renewable energy, water–energy–food security nexus, growth of inadequately serviced densely populated settlements and water re-use.

A SWOT analysis identified 28 strengths, 62 weaknesses, 32 opportunities and 45 threats. The following priority actions are proposed in order to respond to the SWOT analysis:

1. Promote integration of water quality and quantity
2. Formalise cooperative governance structures, processes and resources for water quality regulatory actions
3. Formally address overlaps of statutory/regulatory/oversight mandates that affect WQM
4. Formalise institutional/legal framework for intervention in municipalities with failing water and sanitation functions
5. Strategy and plan for sectoral partnerships and public–private partnerships
6. Rolling engagement with DWS senior management on WQM
7. Rolling public engagement on joint custodianship of the resource
8. Intensify WQM capacity development across sectors
9. Overhaul all aspects of water quality monitoring and data management
10. Intensify all aspects of control monitoring and enforcement
11. Mobilise ex-DWS budget funding of WQM initiatives.

In the international context, good quality water is the foundation for achieving the UN Sustainable Development Goals (SDGs) and further drives the need for an integrated WQM Policy and Strategy for South Africa, for example:

- Goal 1 & 2: No hunger – good water quality is required for the rural and agricultural sector for food production, which is a crucial step in poverty reduction
- Goal 6: Clean water and sanitation
- Goal 14: Life below water speaks to the health of our aquatic systems, which is fundamentally dependent on certain water quality requirements and is affected by changes in water quality.

The literature review of the international experience of WQM identified a number of trends:

#### Strategic alignment

- Water quality problems are increasingly shifting to non-point sources related to failing infrastructure
- Basin water quality rehabilitation and management is a long-term process requiring institutional capacity and financial sustainability, within broader water resources management
- Water resources crisis provides an opportunity to gain political will and momentum, but needs to be sustained
- Catchment WQM requires a combination of technical, regulatory, economic, financial and institutional interventions
- Influencing government financing mechanisms provides a critical means of enabling water quality action
- The SDG indicator process provides an opportunity to address water quality issues.

#### Coherent instruments

- Regulatory and strategic approaches are increasingly focusing on minimising pollution by being stringent on priority sectors
- Clean tech supported by green economy initiatives and financing mechanisms provides targeted ways of reducing pollution at source
- Coherent regulatory regimes and strategic institutional approaches supported by appropriate financial mechanisms and cooperative actions

- Natural (green) infrastructure is recognised as critical aspect of integrated management of water quality in urban and rural settings
- Various economic (and financial) approaches have been attempted, the selection of which should be depend on the individual context and may be targeted
- Good water quality monitoring enables enforcement and compliance, but this can be incrementally developed and funded.

#### Partnerships

- Government needs to play a lead role in driving, coordinating and often financing the remediation, and not always just water quality managers
- Building long-term partnerships is fundamental to sustained and effective local solutions
- Basin institutions lead catchment rehabilitation/protection , through a range of rural and urban measures
- Alignment and consistency is an emerging challenge that requires cooperative governance and regulatory/strategic approaches (vertical and horizontal)
- Private sector has a crucial role to play in minimising its impacts on water resources, and collaborating through water stewardship partnerships
- Civil society has a key role

#### **Discussion**

Rudolph Rescher (Western Cape Department of Agriculture) agreed on the need to take issues of water quality management down to civil society level. There is much talk of this and of alignment, but there are shortcomings with respect to the personnel needed for such an approach, who should not be merely technically skilled, but have the knowledge and ability to work in partnerships. There are silos between departments and individuals that work against partnerships. Bridging these silos will ultimately depend on individuals.

Felicia Nemathaga (DWS RPW Mines) noted that DWS was revisiting water use licences (WULs) and removing WUL conditions that are not measurable. This is the time for stakeholders to recommend the inclusion of conditions that they consider important.

Jonas Mphepya (DEA) emphasised the importance of partnerships and stewardships. Much could be learnt from some provincial initiatives, for example, the thinking around regionalising water treatment. There would be difficulties with such an approach in the Western Cape due to the mountains, but capacity and skills could be regionalised. Boards and agencies could operate plants on behalf of municipalities, but the initiative would have to come from the sector, which would have to decide on the approach.

Jonas Mphepya (DEA) commented that there was much talk of the prioritisation of water quality and the importance of integration. It is important to consider the integration of water quality issues, for example that water quality and eutrophication are linked to urban pollution. Then there is a need to drive efficiencies in tackling issues and managing the necessary infrastructure. Water quality is then the outcome.

Gareth McConkey (Jantech CC) commented that there did not seem to have been public participation in developing the WQM Policy or the IWQMS Strategy.

Mr Weston responded that stakeholders had been involved through the Project Steering Committee (PSC), which involved representatives of external stakeholder institutions, and the Project Management Committee (PMC), which involved internal DWS stakeholders. The PSC and PMC had met regularly during the development of the WQM Policy and the IWQMS Strategy. Mr Viljoen added that public meetings would be convened to allow comments on the WQM Policy once it had been gazetted.

Gareth McConkey (Jantech CC) commented that the public meetings would provide an opportunity to comment on the WQM Policy, but the basis for the policy had already been established and stakeholders might not necessarily be in agreement.

Mr Viljoen responded that stakeholders at the workshop were commenting on edition 1 of the IWQMS Strategy, and their comments would be taken into account in drafting edition 2.

Gareth McConkey (Jantech CC) commented that the development of the IWQMS Strategy had been well done, with the right kind of professional input from the right kind of people, but in putting the strategy into practice, the management of water quality should be kept simple. South Africa already has potentially successful measures for managing water quality (e.g. resource quality objectives), but these do not mean much in practice.

Mr Viljoen responded that the current approach was one of prudent pragmatism. He posed the question of what could be done differently to make a positive difference. The IWQMS Strategy places strong emphasis on intergovernmental stewardship and partnerships and a citizen-based approach. For example, the WRC has a miniSASS project whereby farmers and other citizens can enter rainfall data, which is needed for hydrological modelling, given that the South African Weather Service has been closing rainfall stations. Water quality is everyone's responsibility – the issue is how to put that philosophy into practice. Self-governance of water quality by stakeholders is usually only seen where they have to comply with international standards (e.g. for fruit exports to the European Union).

Annabel Horn (DEA&DP BRIP) noted that citizen-based approaches could only succeed if DWS provided the platform and coordination for citizens to contribute. She commented that there were two possible ways of responding to point 11 of the SWOT 'must do' issues (Mobilise ex-DWS budget funding of WQM initiatives) and it was not clear which was intended, for example (1) DWS could provide budget funding, and provincial government and stakeholders could be custodians and take responsibility or (2) DWS could provide finance and take some responsibility and ownership, and provincial government and stakeholders could coordinate and provide the forum.

Mr Weston responded that both approaches were important. Provincial government has a role to play in water quality management (WQM), but the vast majority in WQM has been through parliamentary appropriation.

Annabel Horn (DEA&DP BRIP) observed that the issues were related to taking ownership. Mr Weston responded that taking ownership involved investing resources. Mr Viljoen invited stakeholders to make recommendations around issues such as whether funds for WQM should be ringfenced, and where operations and maintenance (O&M) should fit in. The most appropriate means need to be explored. The National Water Act makes it clear that the Minister of Water Affairs is the custodian of the national water resources, and DWS remains the accountable department for water and sanitation, but a suitable model is needed for WQM.

Lydia van Rooyen (Wildlands) commented that Charon Marais (Stellenbosch Rivers Cooperatives) and Schalk van der Merwe (Stellenbosch Municipality River Stewardship Programme) would like to make an input in relation to the SWOT 'must do' issues no. 5 (Strategy and plan for sectoral partnerships and public-private partnerships) and no. 7 (Rolling public engagement on joint custodianship of the resource). She emphasised the importance of finding a way to unlock the key to effective WQM.

Mr Viljoen commented that WQM entailed having the necessary funding and taking decisions on how to spend it to best effect.

Adriaan Kurtz (Stellenbosch Municipality) referred to the current water quality crises in the Apies River, the Hartebeespoort Dam and the Rooiwal treatment works. In the North West province, the Water Services Trust is an independent entity owned by Rustenburg Municipality that is responsible for water purification and treatment based on a loan from a commercial bank. It operates according to a sensible non-profit business model that strikes the correct balance between business and service delivery, free of political interference. Directors on the board take responsibility.

Mr Viljoen commented that water quality problems are known and the issue is to find solutions. The activated sludge treatment works at Rooiwal treatment works had once been considered state of the art but would now require millions of Rands to rehabilitate. Huge sums of money had been spent on remediation of the Hartebeespoort Dam, and some success had been achieved with floating islands. Remediation is expensive, however, and water quality should instead be managed at source.

Rudolph Rescher (Western Cape Department of Agriculture) commented that addressing water quality challenges at ground level would have to involve communities; for example, in addressing a problem such as raw sewage in the Eerste River in Stellenbosch the previous week. There are enough farmers with their eyes on the ground to pick up water quality issues, but when they contact DWS to report these, the phone is not answered. Even if it is possible to report the issue, it takes three to six months to address. DWS policies are not implemented. The result is that everyone just does as they please. Officials can keep themselves busy with their key performance areas (KPA's), but guidance is needed from the top, since officials may be busy doing the wrong things. If you do not have good management of human beings, water quality is a lost cause.

Mr Viljoen thanked stakeholders for their brutal honesty. In response to the comment that DWS was tardy in responding to water quality issues on the ground, he commented that stakeholders should not report such issues first to the DWS National Office. DWS is not responsible for municipal failures; there is a chain of responsibility in WQM that needs attention. An initiative was launched to respond to the problem of participants becoming ill from participation in full contact recreation events such as the Midmar Mile and the Duzi canoe marathon due to raw sewage pollution. 'Water warriors' were issued with vouchers for data and reported sewage spills to a WhatsApp number via their cell phones. In this way, a record of spills and responses could be built up and proved successful in reducing water quality events. Incentives are needed for people to participate, as well as a champion if such an initiative is to be successful.

Rudolph Rescher (Western Cape Department of Agriculture) responded that provincial government wants to work with DWS and achieve success, and is not negative about the initiative to develop an effective approach to WQM.

Felicia Nemathaga (DWS RPW Mines) commented that water quality incidents are often reported to DWS National Office but not to the Provincial Office where the responsible officer resides and knows the issues of the catchment.

Mr Weston observed that there was obvious willingness to address water quality issues, and protocols were required to facilitate this.

Patrick van Coller (BGCMA) commented on the need for a central data management system. Mr Weston responded that DWS has a number of data systems. Mr Viljoen added that the main data systems were HYDSTRA (largely for water quantity, including hydrology and flow) and WMS (largely for water quality). The National Integrated Water Information System (NIWIS) had now gone live.

Annabel Horn (DEA&DP BRIP) suggested a water emergency national call centre.

Phumla Ngqumshe (Bitou Local Municipality) suggested engaging with education institutions on the need to develop WQM skills and considering whether their offerings were still relevant to addressing current challenges and the vision for the future.

## **DEVELOPMENT OF THE IWQM STRATEGY**

Ms Reddy gave a presentation on the development of the IWQM Strategy.

A series of steps was followed in developing the WQM Policy and Strategy:

- Outcome 1: Consensus on prioritised water quality issues was preceded by a high-level description a prioritisation of water quality issues
- Outcome 2: Identification of WQM challenges and gaps was preceded by a root cause analysis, insights from a literature review and WQM SWOT analysis
- Outcome 3: Foundation for policy, strategy processes was preceded by the consolidation and way forward.

The core concept of the WQM Policy is that water quality affects the economy and society's well-being. Water quality is a developmental issue. DWS is the sector leader in WQM, but everyone has a role to play, and a joint approach between government departments, the private sector (through

initiatives such as the Strategic Water Partners Network) and civil society forms the basis of tackling the water quality challenges facing the country.

The Policy is a collation of existing policies as they relate to WQM, with stakeholder inputs and a literature survey used to identify gaps. It draws on the 1991 Water Quality Management Policies and Strategies in the RSA, the 2006 Resource Directed Management of Water Quality Policy, the National Development Plan, the National Water Act (NWA), the National Water Resource Strategy, the UN Sustainable Development Goals (Agenda 2063), current DWS policies and other departmental policies, including those of the DMR, DEA, DAFF and DRDLR. It was developed based on the information from the Assessment phase, inputs from the project committees, and importantly, inputs from stakeholder discussions. It strengthens existing policy, but also proposes several new positions, the largest being that WQM need to be an inter-governmental responsibility, with DWS as the sector leader. It is hoped that further consultations will strengthen the policy even more.

The aim of the WQM Policy is to:

- Elevate water quality and water quality management on the country's agenda.
- Formalise and institutionalise a common approach to water quality management in South Africa.
- Support a consistent inter-departmental approach to how water quality is managed in the country.
- Support cooperative and integrated approaches to water quality management across sectors.
- Address operational aspects such as taking an integrated approach, broadening finance mechanisms and improving knowledge and information in the execution of the water quality management function.
- Provide a framework to realise improvements in water quality in key systems.
- Guide the development of an IWQM Strategy.

The WQM principles, Policy and Strategy are aligned in the following way:

The principles establish the fundamental norms, rules, or values that represent what is desirable to the country in terms of WQM. Principles form the foundation on which the policy is developed.

The Policy provides the overall vision and framework for how water quality should be managed in South Africa for at least, the next two decades.

The Strategy describes the prioritised strategic actions that need to take place over a five year horizon to realise the WQM envisaged by the policy, together with the enabling environment.

The implementation plan describes, roles, responsibilities, timeframes and resource requirements to achieve the strategic actions.

The roll-out of the implementation plan involves monitoring and reporting on implementation performance and the effect the Policy and Strategy implementation has had on water resources.

The 15 policy principles developed in the initial phase were structured around the four areas of governance, economic and finance, operational, and data and information. Several of the policy principles were new in respect of their application to WQM, namely those that are underlined in the following list:

- Governance
  - Principle 1: Government-wide water quality management
  - Principle 2: Subsidiarity and accountability
  - Principle 3: Transboundary water quality management
  - Principle 4: Partnerships
  - Principle 5: Administrative fairness and implementability
  - Principle 6: Administrative penalties (administered by DWS, not through the justice system)
- Economic and finance
  - Principle 7: Water quality is a developmental issue
  - Principle 8: Broadened funding principles
  - Principle 9: Polluter pays
- Operational
  - Principle 10: An integrated and adaptive approach
  - Principle 11: Hierarchies of water use and pollution management decision-making
  - Principle 12: Green/ecological infrastructure restoration and rehabilitation
  - Principle 13: Risk-based approach
- Data and information
  - Principle 14: Collection and protection of data

- Principle 15: Publicly available information

The Policy is divided into four chapters, each of which describes the problem/challenge that needs to be resolved through the policy; the response to mitigate the challenge; and the principles to be adopted in responding to the challenge. The four chapters are:

- Chapter A: Inclusive WQM for South Africa
- Chapter B: Integrated, adaptive water quality regulation and management
- Chapter C: Financing IWQM
- Chapter D: Building the knowledge and capacity base

**Chapter A: Inclusive WQM for South Africa** deals with the need to see/understand the impact of water quality on the socio-economic and ecological development in the country; the need for an intra- and inter-departmental response to the WQM challenges in the country; some of the key policy aspects that must be addressed in achieving such an approach; and the need to build partnerships between government departments, civil society and the private sector in order to be able to successfully address the challenges. It addresses principles 1, 2, 4 and 7.

**Chapter 2: Integrated, adaptive water quality regulation and management** spells out the nature of an integrated approach to adaptive WQM and key policy framings of the integrated approach to regulation and adaptive management of water quality, including integrated, adaptive catchment planning, following a risk-based approach; and applying a hierarchy approach to decision-making. It addresses principles 3, 4, 5, 10, 11, 12 and 13.

**Chapter 3: Financing IWQM** examines the financial underpinnings of IWQM, looking at tools for financing the required actions, as well as the role of the private sector in this regard. It addresses principles 4, 6, 8 and 9.

**Chapter 4: Building the knowledge and capacity base** describes the policy with regard to the knowledge, human resource capacity and information base requirements to be able to implement the policy approaches. It addressed principles 4, 14 and 15.

It is tempting to believe that it is possible to follow a straight line from setting to achieving the desired objective, but in the real world this is never straightforward and the context is uncertain. Adaptive management therefore becomes a critical part of the process, necessitating ongoing monitoring and evaluation, and the periodic revision of the strategy and implementation plans.

Global good practice has shifted away from setting strategic plans with objectives to be set in a linear way. Global best practice in the private sector places less emphasis on sticking to a strategic plan than on building a rich and engaging corporate purpose; focuses less on formal structural design and more on effective management processes; is less concerned with controlling employees' behaviour than with developing their capabilities and broadening their perspective; and moves beyond the doctrine of strategy, structure and systems to a more organic model built on the development of purpose, process and people.

The challenge is to ensure that the IWQM strategy also builds the capability of people and institutions to manage in an adaptive and proactive manner that responds in a constructive way to the changing environment.

The strategic intent of the Policy and Strategy:

- Is aligned with the strategic objectives of the policy, while being consistent with broader water and development strategies (National Development Plan, NWRS2)
- Is focused on a short term timeframe, while building a platform for future strategies in line with the policy and visions for water quality management
- Prioritises a limited number of critical concerns, while ensuring that other issues are addressed through ongoing management or monitoring for future prioritisation
- Is relevant at national, catchment and local scales, while ensuring horizontal alignment across sectors and institutions at each scale
- Guides the actions/activities to be described in the implementation plans on a short-term basis
- Allows for adaptive response to changing circumstances and achievements based on effective ongoing monitoring and evaluation, during its timeframe.



The vision for WQM in South Africa is that government, in partnership with the private sector and civil society secure good water quality for all, forever.

The mission is to:

- Support a consistent interdepartmental approach to how water quality is managed in the country
- Support cooperation and integrated approaches to WQM across sectors, including civil society
- Adopt an adaptive management approach in which co-creation and co-learning by key players is entrenched
- Realise improvements in water quality in key systems
- Start to build capacity for longer-term improvement in water quality.

The goals of the WQM Policy and Strategy are:

Goal 1: Improved alignment of Policy, Strategy and legislation

Goal 2: Improved governance

Goal 3: Improved, efficient and effective WQM

Goal 4: Innovative finance

Goal 5: Improved knowledge and information management.

The goals are designed to address various strategic issues:

Goal 1: Improved alignment of Policy, Strategy and legislation

- Strategic issue 1: Harmonise policies and strategies to enable improved integrated WQM
- Strategic issue 2: Legislative review and amendments to enable integrated WQM

Goal 2: Improved governance

- Strategic issue 3: Improve integrated WQM institutional structuring
- Strategic issue 4: Formalise governance frameworks to support non-governmental engagements

Goal 3: Improved, efficient and effective WQM

- Strategic issue 5: Improve coordinated integrated planning
- Strategic issue 6: Strengthen integrated WQM regulation, compliance and enforcement
- Strategic issue 7: Applications of systems-based adaptive management approaches

Goal 4: Innovative finance

- Strategic issue 8: Improve and sustain fiscal support for integrated WQM
- Strategic issue 9: Develop pricing and incentive systems that support integrated WQM

Goal 5: Improved knowledge and information management.

- Strategic issue 10: Strengthen monitoring and information management
- Strategic issue 11: Build water quality and WQM capacity through education, training and communication

Whilst there is a need to change our approach to WQM, it must be recognised that there is a well-conceived framework for WQM that needs to continue being implemented.

Implementation would involve:

- **Fixing priority issues:** This will provide the opportunity to realise success in addressing key issues and will embark on looking at rehabilitation or remediation in critical catchments. This will also entail looking at priority issues that can support the building of capacity and the on-going application of existing instruments.
- **Building capacity:** Whilst it is understood that the capacity that the water sector requires will not be in place within the short term, in terms of skills, integrated information and systems, this is an important issue that needs to be driven immediately and continued over time in order to build adaptive management capacity. This also includes the development of cooperative partnerships across government, private sector and civil society.
- **Maintaining and sustaining the system:** The on-going processes that the DWS has in place will continue to be utilised to manage water quality across the country. These instruments and systems may require strengthening over time. This could involve exploring ways in which to improve and simplify some of these instruments. This would include a drive to look at where instruments and systems can be integrated between departments in order to improve inter-departmental approaches.

## Discussion

Jonas Mphepya (DEA) enquired about the model for implementation and what could be learnt from other countries. In the USA, the agency responsible for policy is different from the environmental agency responsible for implementation and compliance, whereas in South Africa the same institution performs all these roles (namely DWS), which could hinder success.

Mr Weston responded that it is important to understand the various roles and relationships involved in water quality management, and that the implementation plan needs to be clear about who does what.

## WORKSHOP 1: STRATEGIC ACTIONS: REVIEW AND PRIORITISATION

Workshop participants worked together in teams. The objectives were to:

- Review of the strategic action list and comment and add anything that they felt was missing in the table.
- List ten critical actions that need to be addressed in the province to address water quality and its management
- List three critical actions that need to be addressed nationally to address water quality and its management

Teams recorded their responses in the Strategic Actions Table (see Appendix 3).

## WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION

Workshop participants worked together in the same teams as for Workshop 1. The objectives were to answer the following questions for the ten provincial actions that they had prioritised in Workshop 1:

- What are the activities required to achieve these in the province?
- Who are the key actors and what roles do they play?
- How do we ensure implementation?

Teams recorded their responses in on flipcharts, which were typed up as Appendix 4.

## FEEDBACK DISCUSSION

Teams had the opportunity to provide feedback to the workshop (Appendix 3 and 4). The identified national priorities were to get the legal issues right, addressed information systems and capacitate people. Capacity is needed at both national and provincial level, together with the requisite training.

The group from the wine industry raised the problem of the 'Election gap theory', namely that the priorities change every time there is an election (i.e. every four to five years) even though the previous implementation and evaluation cycle is not yet complete.

The link between Strategic Issue 4 (Formalise governance frameworks to support non-governmental engagements) and Strategic Issue 11 (Build WQ and WQM Capacity through Education, Training and Communication) was noted. These two strategic objectives should not be seen independently but need to be implemented together.

Elizabeth Were (See Saw) commented on the lack of private sector engagement in all the strategic areas of the IWQM Strategy and enquired whether that had been a deliberate omission. Mr Weston responded that the private sector was involved in various places in the Strategy, but perhaps their role needs to be made more overt. Mr Viljoen added that there was a particularly active role for the private sector in Strategic objective 4a (Partnerships/stewardships established and maintained).

## WAY FORWARD

This was the eighth of the provincial roadshow workshops. A workshop was scheduled in each province.

The next steps in the process were as follows:


- Gazette Edition 1 of WQM Policy for comment and further revise the Policy to produce Edition 2 (final edition) based on further inputs from wider stakeholder groups (and the public) and the outcomes of the IWQM Strategy development process.
- Develop IWQM Strategy Edition 2 and Implementation Priorities based on inputs from provincial workshops, inputs from project committees and inputs from focused discussions with key stakeholder groups
- National Inter-Departmental Workshop, scheduled for November or December 2016
- National Symposium, scheduled for April 2017.

## CLOSURE

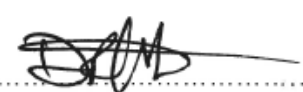
The presentations would be made available on the project website. Mr Weston thanked everyone for their inputs and for giving their time willingly to attend the workshop. Mr McConkey noted that the specialist group of the International Water Association on shared river basin management conference had met in Skukuza in 1996, and would be meeting there again in October 2017. He invited people to participate and to submit potential papers. International work on shared river basin management would be featured.

Mr Viljoen noted that the challenges would lie in the implementation of the IWQM Strategy. He thanked to everyone for their attendance and participation. The National Water Act had been acknowledged as the best water legislation in the world, but there was concern over whether it could be implemented. He remained positively committed to the ideal expressed in the Act. He would like to see activism in South Africa around water quality in rivers; generally people only object to poor water quality in their taps. Mr Nico Rossouw advocated a well-informed and actively engaged South Africa.

The workshop closed at 15:15.

  
 .....  
 DWS Project Manager  
 Pieter Viljoen  
 Scientist Manager: Water Quality Planning

Date: 23/01/2017

  
 .....  
 PSP Team Leader  
 Derek Weston  
 Associate Director: Pegasys

Date: 17/01/2017

**APPENDIX 1: LIST OF ACRONYMS**

ARC	Agricultural Research Council
BGCMA	Breede-Gouritz Catchment Management Agency
CMA	Catchment management agency
CME	Control monitoring and enforcement
COGTA	Department of Cooperative Governance and Traditional Affairs
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DEA&DP	Western Cape Government Department of Environmental Affairs and Development Planning
DMR	Department of Mineral Resources
DRDLR	Department of Rural Development and Land Reform
DWS	Department of Water and Sanitation
EPA	Environmental Protection Agency
IDP	Integrated Development Plan
IWQM	Integrated water quality management
MIG	Municipal Infrastructure Grant
NGO	Non-governmental organisation
NWA	National Water Act
NWRS	National Water Resource Strategy
O&M	Operations and maintenance
PUCMA	Pongola-Umzimkulu Catchment Management Agency
RBIG	Regional Bulk Infrastructure Grant
RQO	Resource quality objective
SAEON	South African Environmental Observation Network
SAPS	South African Police Service
SARS	South African Revenue Service
SDF	Spatial Development Framework
SDG	Sustainable Development Goal
SDP	Spatial Development Plan
SETA	Sector Education and Training Authority
SWOT	Strengths, weaknesses, opportunities, threats
UK	United Kingdom
UN	United Nations
USA/ US	United States of America
WDCS	Waste Discharge Charge System
WISA	Water Institute of Southern Africa
WMA	Water management area
WQM	Water quality management
WRC	Water Research Commission
WSA	Water services authority
WUL	Water use licence
WULA	Water use licence applications
WWTW	Wastewater treatment works

**APPENDIX 2: COMMENTS FOR THE COMMENTS REGISTER**

<b>Comment from Western Cape roadshow</b>	<b>Comment made by</b>
There are shortcomings with respect to the personnel needed for the approach of taking issues of water quality management down to civil society level. The personnel involved should not be merely technically skilled, but have the knowledge and ability to work in partnerships. There are silos between departments and individuals that work against partnerships. Bridging these silos will ultimately depend on individuals.	Rudolph Rescher (Western Cape Department of Agriculture)
Much could be learnt from thinking around regionalising water treatment. Boards and agencies could operate plants on behalf of municipalities, but the initiative would have to come from the sector	Jonas Mphepya (DEA)
The management of water quality should be kept simple. South Africa already has potentially successful measures for managing water quality (e.g. resource quality objectives), but these do not mean much in practice.	Gareth McConkey (Jantech CC)
Citizen-based approaches could only succeed if DWS provided the platform and coordination for citizens to contribute.	Annabel Horn (DEA&DP BRIP)
Charon Marais (Stellenbosch Rivers Cooperatives) and Schalk van der Merwe (Stellenbosch Municipality River Stewardship Programme) would like to make an input in relation to the SWOT 'must do' issues no. 5 (Strategy and plan for sectoral partnerships and public-private partnerships) and no. 7 (Rolling public engagement on joint custodianship of the resource).	Lydia van Rooyen (Wildlands)
There are lessons to be learnt from an effective example in the North West province. The Water Services Trust is an independent entity owned by Rustenburg Municipality that is responsible for water purification and treatment based on a loan from a commercial bank. It operates according to a sensible non-profit business model that strikes the correct balance between business and service delivery, free of political interference. Directors on the board take responsibility.	Adriaan Kurtz (Stellenbosch Municipality)
Guidance is needed from the top, since officials may be busy doing the wrong things. If you do not have good management of human beings, water quality is a lost cause.	Rudolph Rescher (Western Cape Department of Agriculture)
A central data management system is needed.	Patrick van Coller (BGCMA)
A water emergency national call centre was suggested.	Annabel Horn (DEA&DP BRIP)
There is a need to engage with education institutions on the need to develop WQM skills and considering whether their offerings were still relevant to addressing current challenges and the vision for the future.	Phumla Ngqumshe (Bitou Local Municipality)
Water quality pollution has a ripple effect on the economy and tourism. There are too many strategies, policies, guidelines and action plans, but NO IMPLEMENTATION and lack of budget and other resources e.g. human, infrastructure, management. Redefine the ELECTION GAP – with every election there is no continuity in work already done for the previous cycle. With the new elections come new priorities. There is no continuity.	Melissa Lintnaar-Strauss, wine industry group – probably Johan de Jager (Vin Pro), Adriaan Kurtz (Stellenbosch Municipality), Anel Andrag (Winetech), Adriaan Oelofse (Winetech), Irene Waller (La Bri)
Penalties for pollution are too low. There needs to be transparency for penalties/fines	Nico Rossouw and team - probably Carolyn Howell (ARC), Reckson Mulidzi (ARC), Richard Nell (City of Cape Town)
The approach of government not taking local authorities to	Nico Rossouw and team - probably

<b>Comment from Western Cape roadshow</b>	<b>Comment made by</b>
court needs to change because it disempowers local authority officials (e.g. no funding assigned to stormwater management)	Carolyn Howell (ARC), Reckson Mulidzi (ARC), Richard Nell (City of Cape Town)
The Strategic Issue should be the problem statement, not the action	Patrick van Coller (BGCMA), Lydia van Rooyen (Wildlands), Wilna Kloppers (DEA&DP PCM), Annabel Marian Horn (DEA&DP BRIP), Marlé Kunneke (DEA&DP BRIP), Gareth McConkey (Jantech CC), Izak Toerien (Department Local Government)
The need for good leadership incentive and the need to move to implementation apply to most/all strategic issues	Patrick van Coller (BGCMA), Lydia van Rooyen (Wildlands), Wilna Kloppers (DEA&DP PCM), Annabel Marian Horn (DEA&DP BRIP), Marlé Kunneke (DEA&DP BRIP), Gareth McConkey (Jantech CC), Izak Toerien (Department Local Government)
Resource-based management needs to feature in the Strategy.	Patrick van Coller (BGCMA), Lydia van Rooyen (Wildlands), Wilna Kloppers (DEA&DP PCM), Annabel Marian Horn (DEA&DP BRIP), Marlé Kunneke (DEA&DP BRIP), Gareth McConkey (Jantech CC), Izak Toerien (Department Local Government)
In the USA, the agency responsible for policy is different from the environmental agency responsible for implementation and compliance, whereas in South Africa the same institution performs all these roles (namely DWS), which could hinder success.	Jonas Mphepya (DEA)

### APPENDIX 3: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 1 – STRATEGIC ACTIONS: REVIEW AND PRIORITISATION

T1: Sibusiso Maseko (DWS Institutional Oversight HO), Felicia Nemathaga (DWS RPW Mines), Bridget Fundikwa (Green Cape), Linda Rossouw (Consultant)

T2: Melissa Lintnaar-Strauss, wine industry group – probably Johan de Jager (Vin Pro), Adriaan Kurtz (Stellenbosch Municipality), Anel Andrag (Winetech), Adriaan Oelofse (Winetech), Irene Waller (La Bri)

T3: probably Phumla Ngqumshe (Bitou Local Municipality), Rudolph Rescher (Western Cape Department of Agriculture), Juan Hugo (DEA&DP BRIP), Tiahnah-Leigh Gobel (Living Lands), Elizabeth Were (See Saw)

T4: Nico Rossouw and team - probably Carolyn Howell (ARC), Reckson Mulidzi (ARC), Richard Nell (City of Cape Town)

T5: Patrick van Coller (BGCMA), Lydia van Rooyen (Wildlands), Wilna Kloppers (DEA&DP PCM), Annabel Marian Horn (DEA&DP BRIP), Marlé Kunneke (DEA&DP BRIP), Gareth McConkey (Jantech CC), Izak Toerien (Department Local Government)

T6: Michiel Meets (Eco-Owl Consulting), Esmari Steenkamp (Swartland Municipality), Jonas Mphepya (DEA), Derick Kellerman (Xylem)

#### THE IWQM STRATEGIC OBJECTIVES

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
<b>Strategic Issue 1:</b> Harmonization of Policies and Strategic to enable improved WQM	<b>SO1 a:</b> Policies and Strategies impacting upon IWQM are harmonized	T5: Need good leadership incentive. Need to move to implementation. Policy and strategy may be aligned, but the priorities change according to region/catchment; priorities are thus not aligned T6: Create awareness of WATER in general – all departments and sectors	T1: X T4: X	
<b>STRATEGIC ISSUE 2:</b> Legislative review and amendments to enable integrated WQM	<b>SO2a:</b> NWA/WSA effectively support integrated WQM	T5: NWA is good, but regulations need to be reviewed. General authorisations can look at a risk-based base/assessment	T1: X	
	<b>SO2b:</b> Other legislation effectively supports integrated WQM	T5: NEMA and municipal by-laws need to be integrated	T1: X	
<b>STRATEGIC ISSUE 3:</b> Improved WQM institutional structuring	<b>SO3a:</b> DWS departmental structures support integrated WQM	T1: Clear descriptions of roles and responsibilities of institutional structures T2: National databases must be available of Blue and Green Drop. Availability of water quality information T5: Yes, but the problem of transfer of authority/delegation to CMAs	T2: X T6: X	
	<b>SO3b:</b> Inter-sector departmental structures established to support integrated WQM	T1: Head Office structures should be in line with regional structures to improve accountability T5: These are not effective as the KPAs are not aligned to WRM. CMA must receive delegation (do the work) while DWS becomes EPA equivalent	T4: X T6: X	T5: X

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
<b>STRATEGIC ISSUE 4:</b> Formalise governance frameworks to support non-governmental engagements	<b>SO4a:</b> Partnerships/stewardships established and maintained	T4: Also include provincial/CMA/local authorities (of not included in SO3b)		T3: X
	<b>SO4b:</b> Governance framework for active citizenry formalized	T1: Perhaps look at existing programmes that work/do not work, for example, the Adopt a River Programme T5: NWA supports, but does not give sufficient guidance		
<b>STRATEGIC ISSUE 5:</b> Improved coordination in integrated planning	<b>SO5a:</b> Integrated sectoral planning approach is adopted at transboundary and national level	T3: Alignment between WQM and development planning. Coordination between key players T5: May be levels missing (provincial and local) (SDF, SDPs etc.)		T3: X
	<b>SO5b:</b> Integrated sectoral planning approach adopted in catchment/regional plans	T5: May be levels missing (provincial and local) (SDF, SDPs etc.). Land use planning is very important. Compliance to plans is the issue		T4: X
<b>STRATEGIC ISSUE 6:</b> Strengthen IWQM Regulation, Compliance and Enforcement	<b>SO6a:</b> Licencing processes streamlined	T1: Improve timeline for licensing T3: One environment system T5: Delegations must be in place. Implement risk-based tools. Assessment of licences against objectives	T2: X T3: X T5: X T6: X	T1: X T4: X T6: X
	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	T2: e.g. Green/Blue Drop programme that was implemented effectively, and it has not been implemented in the last 2–3 years T3: Validation and verification T6: Agency (independent) operating across the board for enforcement (e.g. similar to the US EPA)	T6: X	T1: X T6: X
<b>STRATEGIC ISSUE 7:</b> Application of Systems-based Adaptive Management Approaches	<b>SO7a:</b> Adaptive systems-based management is applied at catchment level (added by T3: 'plus fiscal reform')	T3: Decentralisation rather than localisation (more power to CMAs). Regional management practices. Ability to respond is quicker		T3: X
<b>STRATEGIC ISSUE 8:</b> Fiscal support for integrated WQM	<b>SO8a:</b> WQM interventions are financially supported by the fiscus	T1: Should consider increasing water use licence application fee T3: Opportunity to pilot (privatisation and decentralisation). Business opportunity to deal with sanitation issues = environment and social/service T4: Not just for WQM interventions but also for WQM	T3: X	T6: X
<b>STRATEGIC ISSUE 9:</b> Develop pricing and incentives that support integrated WQM	<b>SO9a:</b> The Waste Discharge Charge System is implemented	T1: Increase implementation of regulations such as public–private partnerships. Transparency of the rules and regulations on waste discharge. Municipalities/local government need to take more responsibility T4: Penalties too low	T1: X	



STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
	<b>SO9b:</b> Mechanisms for incentivising good practice developed	<b>T2:</b> Have incentives for citizens to do good practices e.g. provide incentives and guidelines for recycling of water, installation of rainwater harvesting, grey water management.	<b>T1:</b> X <b>T4:</b> X	<b>T1:</b> X <b>T2:</b> X
<b>STRATEGIC ISSUE 10:</b> Strengthen Monitoring and Information Management	<b>SO10a:</b> An integrated and functioning WQ monitoring network	<b>T2:</b> Monitoring of water resources has to be strengthened. How is data disseminated to stakeholders?	<b>T3:</b> X <b>T6:</b> X	<b>T2:</b> X
	<b>SO10b:</b> Information systems that are current and accessible to support adaptive WQM	<b>T1:</b> Expand forums/platforms to make sure everyone has access to information. At times, the non-urban areas have limited information <b>T5:</b> Need for coordination of systems. Various systems/levels for various roleplayers. If DWS cannot manage the system(s), it must be outsourced. Good management requires good information. National water emergency call centre	<b>T3:</b> X <b>T5:</b> X <b>T6:</b> X	<b>T4:</b> X <b>T5:</b> X
	<b>SO10c:</b> Routine assessments inform adaptive WQM	<b>T4:</b> Assessments also at local and provincial/WMA level	<b>T3:</b> X	
<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	<b>T1:</b> Enforce training from top management to the whole organisation regardless of experience/presumed knowledge of the sector <b>T2:</b> At local government level, National Department must provide appropriate policies and guidelines for local government to implement in their by-laws <b>T3:</b> At some level, this strategic objective incorporates strategic issue 4 (Formalise governance frameworks to support non-governmental engagements), but lacks the private sector engagement <b>T5:</b> Infrastructure development and management of all systems; require skilled and capacitated human resources	<b>T5:</b> X	<b>T5:</b> X <b>T6:</b> X
	<b>SO11b:</b> WQM decisions are underpinned by best practice, research and innovation ( <b>T2:</b> added 'and implementation')	<b>T2:</b> Certain sectors are already providing research and innovation to assist with water quality policies at national level, but the good work done is not implemented <b>T3:</b> Include – How can IWQM be part of the green economy? Include technology to achieve improved IWQM. Create space for private sector too	<b>T2:</b> X	<b>T2:</b> X
	<b>SO11c:</b> A well informed and actively engaged South Africa	<b>T1:</b> Effective internal communication is necessary in departments. Strengthen international communication on water quality management	<b>T4:</b> X	<b>T1:</b> X <b>T3:</b> X

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
		T5: Enable public to be the water quality watchdog through proper access to information		

**General Comments:**

T2: Water quality pollution has a ripple effect on the economy and tourism. There are too many strategies, policies, guidelines and action plans, but NO IMPLEMENTATION and lack of budget and other resources e.g. human, infrastructure, management. Redefine the ELECTION GAP – with every election there is no continuity in work already done for the previous cycle. With the new elections come new priorities. There is no continuity.

T4: What are the actual water quality targets and objectives for rivers and streams? What do we manage towards?

Penalties for pollution are too low. Needs to be transparency for penalties/fines

Approach re government not taking local authorities to court. This needs to change because it disempowers local authority officials (e.g. no funding assigned to stormwater management)

T5: Note: The Strategic Issue should be the problem statement, not the action

The need for good leadership incentive and the need to move to implementation apply to most/all strategic issues

Lack of resource-based management

#### APPENDIX 4: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION

T1: Sibusiso Maseko (DWS Institutional Oversight HO), Felicia Nemathaga (DWS RPW Mines), Bridget Fundikwa (Green Cape), Linda Rossouw (Consultant)

	Strategic issue/objective	Activities	Key actors
1	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	Development of legislative tools to influence compliance and enforcement – ‘Give them teeth’	DWS Head Office to develop tools DWS Regional Offices to implement tools
2	<b>SO9b:</b> Mechanisms for incentivising good practice developed	Implementation of tax incentives for industry, agricultural sector etc. for good water management practices Issuing of certificates/awards with compliant industries/groups	Water use and pollution sectors (including DWS, CMA), SARS, Water Trading Entity
3	<b>SO11c:</b> A well informed and actively engaged South Africa	Strategise awareness-creating activities and platforms for engagement. Review communication strategy	Water use and pollution sectors (including DWS, CMA)

T2: T2: Melissa Lintnaar-Strauss, wine industry group – probably Johan de Jager (Vin Pro), Adriaan Kurtz (Stellenbosch Municipality), Anel Andrag (Winetech), Adriaan Oelofse (Winetech), Irene Waller (La Bri)

	Strategic issue/objective	Activities	Key actors
1	<b>SO9b:</b> Mechanisms for incentivising good practice developed	<ul style="list-style-type: none"> <li>Finalise model to incentivise good practices for water quality e.g. grey water reuse, recycling water</li> <li>Provide guidelines for implementation e.g. for local authorities (e.g. what do I do with swimming pool backwash water?)</li> </ul>	
2	<b>SO10a:</b> An integrated and functioning WQ monitoring network	<ul style="list-style-type: none"> <li>There must be capacity available to measure, monitor, regulate and enforce WQM. Capacity includes people, funds, legislation systems</li> <li>Cooperative governance is not working in current format. How will this change to ensure compliance of other state organs with Water Act?</li> </ul>	
3	<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<ul style="list-style-type: none"> <li>The water quality issues in different WMAs have to be managed according to the needs of the areas. The one-size-fits-all approach</li> </ul>	

	Strategic issue/objective	Activities	Key actors
		<p>should not be used in the local context</p> <ul style="list-style-type: none"> <li>• Election gap</li> <li>• Implement what is already in the legislation. Long-term economic effect of water quality</li> </ul>	

T3: probably Phumla Ngqumshe (Bitou Local Municipality), Rudolph Rescher (Western Cape Department of Agriculture), Juan Hugo (DEA&DP BRIP), Tiahnah-Leigh Gobel (Living Lands), Elizabeth Were (See Saw)

	Strategic objective	Activities	Key actors
1	<p><b>STRATEGIC ISSUE 4:</b> Formalise governance frameworks to support non-governmental engagements</p> <p style="text-align: center;">+</p> <p><b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication</p>	<ul style="list-style-type: none"> <li>• Partnership platforms (online, meetings) using technology (let the water forum come to life)</li> <li>• Water forums at levels that are practical and engaging – localised – self-organised from the bottom, community led → feeds back to officials</li> <li>• Guided workshops that include all who want to add their voice (public, private, governance)</li> <li>• Stellenbosch Corporate Governance Leadership School</li> <li>• Forums = input, guidance, access to information, spreading knowledge</li> <li>• Knowledge exchanges and support: Where capacity is large in certain sectors, it can be shared to other areas where capacity is lacking; 'Outside' experts coming in on a regular basis until knowledge is shared/spilled over</li> <li>• Developing a public communication strategy and series of sustained</li> </ul>	

	Strategic objective	Activities	Key actors
		communication campaigns <ul style="list-style-type: none"> <li>• NB: capacity is needed for councillor training</li> <li>• Vocational and technical programmes – apprenticeship</li> </ul>	
2	<b>STRATEGIC ISSUE 5:</b> Improved coordination in integrated planning	<ul style="list-style-type: none"> <li>• SA23 – alignment with IDPs, RBIG and MIG funding processes for WQM priorities and management responses. Forum for provincial engagement with regard to planning</li> <li>• Aligning local, provincial, national implementation agendas/strategies for WQM</li> </ul>	
3	<b>STRATEGIC ISSUE 7:</b> Application of Systems-based Adaptive Management Approaches	<ul style="list-style-type: none"> <li>• CMAs to engage with municipal planning and decision-making</li> <li>• Allowing the CMAs to have sufficient delegated authority to apply adaptive decision-making</li> <li>• Legislation needs to be accommodating</li> </ul>	

T4: Nico Rossouw and team - probably Carolyn Howell (ARC), Reckson Mulidzi (ARC), Richard Nell (City of Cape Town)

	Strategic objective	Activities	Key actors
1	<b>SO6a:</b> Licencing processes streamlined	<ul style="list-style-type: none"> <li>• WULs should be guided by catchment/sub-catchment scale waste load allocation studies that account for other sources</li> </ul>	
2	<b>SO4b:</b> Governance framework for active citizenry formalized (S46)	<ul style="list-style-type: none"> <li>• Citizen monitoring takes place within a bigger river stewardship initiative – not monitoring for the sake of monitoring</li> </ul>	
3	<b>SO10b:</b> Information systems that are current and accessible to support adaptive WQM (S48)	<ul style="list-style-type: none"> <li>• System to enable access to water quality data must consider data ownership, data quality control etc.</li> </ul>	

T5: Patrick van Coller (BGCMA), Lydia van Rooyen (Wildlands), Wilna Kloppers (DEA&DP PCM), Annabel Marian Horn (DEA&DP BRIP), Marlé Kunneke (DEA&DP BRIP), Gareth McConkey (Jantech CC), Izak Toerien (Department Local Government)

	<b>Strategic issue/objective</b>	<b>Activities</b>	<b>Key actors</b>
1	<b>SO3b:</b> Inter-sector departmental structures established to support integrated WQM	<ul style="list-style-type: none"> <li>Create a working structure to enable the protection and sustainable use of water resources</li> <li>DWS provincial initiative</li> </ul>	<ul style="list-style-type: none"> <li>DWS, CMAs</li> <li>Provincial departments: Environment, Local Government, Agriculture, Human Settlement, Education and Training</li> <li>District municipalities and local authorities</li> <li>Cape Nature</li> </ul>
2	<b>SO10b:</b> Information systems that are current and accessible to support adaptive WQM	<ul style="list-style-type: none"> <li>Information system to be designed/ established with capability to supply information at various levels to inform decision-making and collaboration</li> </ul>	DWS, SAEON, all monitoring authorities/agencies
3	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	<ul style="list-style-type: none"> <li>Prioritise the appointment of WQM staff on all levels</li> <li>Develop standardised education and training programmes to manage water and waste water infrastructure and water resource quality</li> </ul>	DWS, SETAs, WISA, WRC, education institutions

T6: Michiel Meets (Eco-Owl Consulting), Esmari Steenkamp (Swartland Municipality), Jonas Mphepya (DEA), Derick Kellerman (Xylem)

	<b>Strategic objective</b>	<b>Activities</b>	<b>Key actors</b>
1	<b>STRATEGIC ISSUE 6:</b> Strengthen IWQM Regulation, Compliance and Enforcement	Licensing process: <ul style="list-style-type: none"> <li>Implement a timeframe</li> <li>Avoid duplication of information</li> </ul>	DWS
2	<b>STRATEGIC ISSUE 8:</b> Fiscal support for integrated WQM	<ul style="list-style-type: none"> <li>SA 38 and 39</li> </ul>	DWS
3	<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<ul style="list-style-type: none"> <li>SA50 and 51</li> </ul>	DWS

General: Big aspirations – rather focus on current/burning issues. Be practical with simple solutions



## DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS) - WP10978

### Implications of the WQM Policy and IWQM Strategy for Implementation

#### Regional Workshop: North West

18<sup>th</sup> November 2016 | Hunters Rest, Rustenburg | 09h00 – 15h45

### AGENDA

**Chairperson:** Ms. Doris Maumela

**Purpose of Meeting:**

- To create awareness regarding the WQM Policy and the IWQM Strategy;
- To obtain comments and inputs into the WQM Policy and the IWQM Strategy;
- To initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the WMAs;
- To solicit initial inputs for the conversion of the WQM Policy and the IWQM Strategy into practice; and
- To outline the way forward.

Item	Time	Topic	Responsible
	09h00 – 09h30	Arrival Tea and Coffee	
1	09h30 – 09h50	Welcome, Introductions and Purpose of the Meeting	Chair
2	09h50 – 10h30	Background to Water Quality Management in SA <ul style="list-style-type: none"><li>▪ <i>History, Issues and Challenges</i></li><li>▪ <i>Discussion on Regional Context</i></li></ul>	DWS Project Team
3	10h30 – 11h30	Development of the IWQM Strategy <ul style="list-style-type: none"><li>▪ <i>WQM Policy Responses</i></li><li>▪ <i>IWQM Strategic Responses</i></li><li>▪ <i>Discussion</i></li></ul>	Pegasys
4	11h30 – 12h45	<b>Workshop 1: Strategic Actions: Review and Prioritisation</b>	Facilitator: Pegasys
	12h45 - 13h30	Lunch	
5	13h30 – 14h45	<b>Workshop 2: Implications for Implementation</b>	Facilitator: Pegasys
7	14h45 – 15h10	Feedback Discussion	Pegasys
8	15h10 – 15h30	Way forward and Closure	Chair



**water & sanitation**  
 Department:  
 Water and Sanitation  
 REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF WATER AND SANITATION  
 DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS)  
 (WP10978)  
 MINUTES OF ROADSHOW WORKSHOP**

**Date:** 18 November 2016

**Time:** 09:00–13:45

**Venue:** Protea Hotel Hunter's Rest, Rustenburg

**Present:**

Anna Malemela	DWS
Jenny Evans	DWS
Kevin Khoze	DWS
Lillian Siwelane	DWS
Mahadi Mofokeng	DWS
Phillip Tjale	DWS
Sebenzile Ntshangase	DWS
Sepadi Motau	DWS
Sharlotte Tema	DWS
Tshepo Mathebe	DWS
Kentse Mathiba	DWS Head Office
MW (Lebo) Mosoa	DWS IWRP
AD (Doris) Maumela	DWS Limpopo North West Proto-CMA
Ndivho Mphuma	DWS Limpopo North West Proto-CMA
Pieter Viljoen	DWS WRPS
Lucky Motsoeneng	Glencore BHK
Lelanie du Preez	Glencore Rhovan Operations
Lynette Tungwane	Glencore Western Mine
Keneilwe Makwela	Glencore Western Mines
Tania Rademeyer	Impala Platinum
Abram Semata	Land Bank
Beatrice van der Merwe	Marico River Conservation Association
Irene van der Merwe	Marico River Conservation Association
Shalene Janse van Rensburg	Midvaal Water Co
Derek Weston	Pegasys
Traci Reddy	Pegasys
Mothusi Mafatshe	Pilanesberg Platinum Mines
Peter Lentsoane	Platmin SA
Robyn Arnold	Project team
Tshepo Dire	RB Plats
Stenly Makuwa	Tlokwe City Council
Thuli Letseka	Tlokwe City Council
Hlulani Chauke	Union Mine Anglo American
Mmalenyalo Moeng	Union Mine Anglo American

**Apology:**

Daan van der Merwe     Marico River Conservation Association

**WELCOME, INTRODUCTIONS AND PURPOSE OF THE MEETING**

Doris Maumela (Acting CEO, DWS Limpopo North West Proto-CMA) opened the meeting and welcomed everyone on behalf of the NW DWS provincial office and the Limpopo North West proto-CMA. She apologised for the change of date due to a clash between the date that had initially been scheduled and the activities of the provincial office. She allowed a round of introductions.

Ms Maumela noted that the purpose of the workshop was to:



- Create awareness regarding the WQM Policy and the IWQM Strategy
- Obtain comments and inputs into the WQM Policy and the IWQM Strategy
- Initiate an understanding of implementation of WQM Policy and the IWQM Strategy in the water management areas
- Solicit initial inputs for the conversion of the IWQM Policy and the IWQM Strategy into practice
- Outline the way forward.

Mr Viljoen welcomed everyone to the workshop. The DWS Planning Directorate was managing the project on behalf of DWS. The intention was not only to develop a departmental but also a sectoral strategy together with other government departments (e.g. DAFF, COGTA), and role players in water quality (e.g. mining, agriculture, local government). He emphasised that this was a targeted stakeholder meeting not a public participation meeting. There will be public participation meetings to allow public comment on the policy once it has been gazetted. The emphasis of the current meeting was the IWQMS Strategy. Despite the legislation and policies already in place, water quality was still deteriorating. South Africa has had legislation governing water quality since the 1919 Irrigation Act, which was promulgated in response to the growing challenges to water quality from urbanisation, and required the irrigation of waste water on to land.

The 1956 Water Act changed the approach to require the treatment of water to acceptable quality and putting it back in the river, taking water scarcity into account. Despite the promulgation of the National Water Act in 1998, there are still problems with water quality. Today we still face the challenges of urbanisation, which puts strain on both the quality and quantity of water resources. Einstein said that we cannot expect different outcomes if we continue to do things in the same way. Today we still face the challenges of urbanisation, which puts strain on both the quality and quantity of water resources. Einstein said that we cannot expect different outcomes if we continue to do things in the same way. The 1956 Water Act changed the approach to water quality to command and control. The 1998 National Water Act continued with the command and control approach but also addressed financial provisioning. It did not consider the approach through partnerships that the WQM Policy to be presented at this workshop proposes. The implementation plan for the second National Water Resource Strategy (NWRS2) relies on other government departments. The approach of the current policy is to consider what can be done differently to make a fundamental difference to protect water resources and improve water quality. One of the slogans of DWS is 'Water quality is everyone's responsibility'. It cannot be left to DWS officials alone. Diffuse sources are not even licensed but have a significant impact on water quality.

## **BACKGROUND TO WATER QUALITY MANAGEMENT IN SOUTH AFRICA**

Mr Weston gave a presentation on the background to water quality management in South Africa.

South Africa is faced with many of the problems related to poor water quality; this may be attributed to the vast number of challenges we face with managing the various sources of pollution, including air pollution, agricultural drift and run-off, industrial wastewater discharges, urban run-off, and challenge with managing run-off from unserved areas, mine water and sewage water.

Many factors contribute to the WQM challenges, including:

- Sources of water pollution are complex. There are varying sources of pollution (point source, diffuse) and water quality changes along the hydrological regime.
- Catchments are complex socio-economic systems, and some are shared watercourses: Sufficiently integrated and adaptive approaches within and across catchments should be implemented, which is currently lacking.
- Sufficient alignment and coordination is needed within and between government departments. WQM is hampered by poor coordination and conflicting approaches.
- There is insufficient finance for WQM. The available financial resources are insufficient and do not recognise the investment required to counteract economic harm.
- There is insufficient data and information management: Data sharing is a challenge, including transboundary-management. There is a challenge in ensuring that the public has access to information.
- There are capacity and skills constraints in the field of WQM

In response to the country's need to take an improved integrated approach to WQM, DWS has initiated a project to develop a national, integrated Water Quality Management (WQM) Strategy, but before the strategy could be developed the current WQM policies, which were needed in order to give direction to the strategy, would require revision. This is due to the fact that whilst innovative at the time of publication, the current policies (Water Quality Management Policies and Strategies in the RSA in 1991 and the 2006 Resource Directed Management of Water Quality Policy) are dated and not integrated, and need to be aligned with the current overarching policy and legislative frameworks, socio-economic trends and emerging global issues.

The contract for the project was signed on 4 October 2015 and would continue until September 2017. The project comprises five phases: Inception, Assessment, Policy, Strategy and Policy into Practice. The policy and strategy were being developed through an iterative process, whereby first editions of the policy and strategy would be sent out for comment, and would be amended in response to the comments received. The project was currently in the Strategy phase, which spanned from August 2016 until February 2017, which entailed revise, update & integrate existing WQM strategies based on inputs from Stakeholders & assessment phase

All documents produced were available on the DWS project website ([www.dws.gov.za/projects/iwqms](http://www.dws.gov.za/projects/iwqms)). The following documents had been completed to date:

- Inception Report
- Review of WQM Policies and Strategies
- Review of WQM Institutional Arrangements
- Review of WQM Instruments
- Note on the WQM Challenges
- Water Quality Glossary
- Capacity Building Strategy
- Stakeholder Communication Strategy
- Newsletters 1 and 2
- Note on the WQM Policy Principles
- WQM Policy (Edition 1)
- Note on the Strategic Framework

The identified water quality issues that need to be addressed through the WQM Policy and Strategy include: salinisation, nutrient enrichment and eutrophication, acidification and acid mine drainage, erosion and sedimentation, urban runoff pollution, litter and solid waste, microbial pollution, waterborne pathogens and human health, agrochemicals and toxic substances, dissolved oxygen and organic pollution, trace metals, hydrocarbon pollution, thermal pollution, nanoparticles and radioactivity.

There is already considerable knowledge and understanding of many of the priority water quality issues (e.g. eutrophication, salinisation) but many of the issues need more research (e.g. the impact of nanoparticles, metals, hydrocarbons and agrichemicals).

Impacts on water quality by industry, mining, municipalities, mining and urban wash-off were considered, and the following issues were identified:

- Municipalities: lack of maintenance of wastewater infrastructure, inappropriate technologies, 'unsexy' infrastructure, the need for financial incentives to attract industry, lack of enforcement, lack of ownership by affected communities, lack of appropriate bylaws, lack of adequate / appropriate urban planning, understanding of mandates is confused, capacity challenges, insufficient resourcing, labour challenges, poor budgeting/ not ring-fencing budgets, lack of political support, politically embarrassing, poor understanding of importance, unsustainable financial model, rapid urbanisation, supply trumps quality
- Industry: not meeting discharge standards in municipal environments, legacy water quality issues, wastewater treatment works (WWTW) technology inappropriate, municipalities treat industry as source of revenue, WWTW removes incentives to pre-treat, WDCA on hold, political pressure to attract industry, no incentives to treat, transfers responsibility to meet standards to local municipalities, lack of trust between industry and government, lack of enforcement, inappropriate licence conditions, lack of capacity, ineffective monitoring, limited communication, poor cooperative governance

- Agriculture: poor land use practices, over-irrigation, over-fertilisation, over-abstraction, varying contexts (e.g. small vs commercial, communal), extension services weak, poor enforcement, capacity challenges, disbursed spatial nature of agriculture, lack of financial resources, lack of accountability by both government and farmers, jobs trump environment and water quality, not understood to be a priority, poor cooperative governance
- Urban wash-off: degradation of wetlands, canalisation of rivers and the degradation of riparian areas and developments in floodplains; lack of maintenance of infrastructure; rapid growth in poorly serviced peri-urban dense settlements; lack of ownership by society; lack of enforcement and lack of bylaws; mindset of not needing to treat; lack of adequate / appropriate urban planning; understanding of mandates is confused; capacity challenges; insufficient resourcing, and spend requirements are huge; lack of political support; poor understanding of importance; rapid urbanisation; unsustainable financial model
- Mining: Existing mines not meeting water quality discharge standards; government facing significant challenges in managing impact of abandoned mines; uncertainty around mine closure funds and meeting new closure requirements; insufficient control monitoring and enforcement function at DWS (at national through to local level, also linked to capacity to implement, know-how to hold someone accountable and ability to write proper licence conditions); Weak technical capacity, with water quality officers not knowing how they fit in, inaccurate water use licences, not sure how to enforce, cannot read and interpret water data, lack of knowledge around protected areas or understanding what that really means; Political interference in establishment of mines (e.g. unlicensed mines, establishment of mining in areas that are protected, competing mandates, short-term benefit overshadows long term sustainability); poor cooperative governance and mismatch in departmental mandates; insufficient financial resources

Future trends that with implications for water quality are anticipated to be: climate change, hydraulic fracturing, renewable energy, water–energy–food security nexus, growth of inadequately serviced densely populated settlements and water re-use.

A SWOT analysis identified 28 strengths, 62 weaknesses, 32 opportunities and 45 threats. The following priority actions are proposed in order to respond to the SWOT analysis:

1. Promote integration of water quality and quantity
2. Formalise cooperative governance structures, processes and resources for water quality regulatory actions
3. Formally address overlaps of statutory/regulatory/oversight mandates that affect WQM
4. Formalise institutional/legal framework for intervention in municipalities with failing water and sanitation functions
5. Strategy and plan for sectoral partnerships and public–private partnerships
6. Rolling engagement with DWS senior management on WQM
7. Rolling public engagement on joint custodianship of the resource
8. Intensify WQM capacity development across sectors
9. Overhaul all aspects of water quality monitoring and data management
10. Intensify all aspects of control monitoring and enforcement
11. Mobilise ex-DWS budget funding of WQM initiatives.

In the international context, good quality water is the foundation for achieving the UN Sustainable Development Goals (SDGs) and further drives the need for an integrated WQM Policy and Strategy for South Africa, for example:

- Goal 1 & 2: No hunger – good water quality is required for the rural and agricultural sector for food production, which is a crucial step in poverty reduction
- Goal 6: Clean water and sanitation
- Goal 14: Life below water speaks to the health of our aquatic systems, which is fundamentally dependent on certain water quality requirements and is affected by changes in water quality.

The literature review of the international experience of WQM identified a number of trends:

#### Strategic alignment

- Water quality problems are increasingly shifting to non-point sources related to failing infrastructure

- Basin water quality rehabilitation and management is a long-term process requiring institutional capacity and financial sustainability, within broader water resources management
- Water resources crisis provides an opportunity to gain political will and momentum, but needs to be sustained
- Catchment WQM requires a combination of technical, regulatory, economic, financial and institutional interventions
- Influencing government financing mechanisms provides a critical means of enabling water quality action
- The SDG indicator process provides an opportunity to address water quality issues.

#### Coherent instruments

- Regulatory and strategic approaches are increasingly focusing on minimising pollution by being stringent on priority sectors
- Clean tech supported by green economy initiatives and financing mechanisms provides targeted ways of reducing pollution at source
- Coherent regulatory regimes and strategic institutional approaches supported by appropriate financial mechanisms and cooperative actions
- Natural (green) infrastructure is recognised as critical aspect of integrated management of water quality in urban and rural settings
- Various economic (and financial) approaches have been attempted, the selection of which should depend on the individual context and may be targeted
- Good water quality monitoring enables enforcement and compliance, but this can be incrementally developed and funded.

#### Partnerships

- Government needs to play a lead role in driving, coordinating and often financing the remediation, and not always just water quality managers
- Building long-term partnerships is fundamental to sustained and effective local solutions
- Basin institutions lead catchment rehabilitation/protection, through a range of rural and urban measures
- Alignment and consistency is an emerging challenge that requires cooperative governance and regulatory/strategic approaches (vertical and horizontal)
- Private sector has a crucial role to play in minimising its impacts on water resources, and collaborating through water stewardship partnerships
- Civil society has a key role

#### **Discussion**

Beatrice van der Merwe (Marico River Conservation Association) enquired about the relationship between the project to develop an IWQM Strategy and the national project to develop resource quality objectives.

Mr Viljoen responded that the aim of the national project was to set the resource quality class, as required by the National Water Act. The IWQM Strategy was overarching in that it would have to give direction to implementing the resource quality classes once they had been developed, including incorporating them in licence conditions and ensuring compliance.

Beatrice van der Merwe (Marico River Conservation Association) commented on the relationship between water quality and quantity. Alien invasive vegetation impacts on water quantity and by default also on water quality, but addressing the impact of alien invasion vegetation did not seem to be part of the IWQM Strategy. This would require partnerships with DEA.

Jenny Evans (DWS Operational Support) enquired whether the SWOT analysis had included the good things being done in catchments. She noted that workshop participants had been invited to 'think out of the box' but cautioned that any initiatives should be rooted in the practical. There are some areas where practice has had a positive impact. The list of 'must does' from the SWOT analysis does not focus on particular problem areas. DWS is lacking in trying to do everything (e.g. trying to make water use authorisation broader without focusing on the issues).

Mr Viljoen concurred that there is a need to consider what is working in some catchments, how to replicate these initiatives in other catchments and how to integrate things to make progress.

Mr Viljoen commented that the notion of formalising cooperative governance structures, processes and resources for water quality regulatory actions (SWOT 'must do' no. 2) had been frowned upon in the past as it was thought that this should be allowed to develop of its own accord, but enforced cooperative governance was now being considered. There is work on strategic water source areas and how to protect them. Will other departments respect a section 12 regulation? How can it be ensured that the plans that DWS makes are integrated with the plans of other national and provincial government departments?. This is a strong new emphasis of the WQM Policy.

Beatrice van der Merwe (Marico River Conservation Association) commented that the laws and policies of government departments should not contradict one another.

Mr Weston acknowledged the need for coherence.

Mr Viljoen commented that this should not be pursued through discord between departments but in a systematic way. Evidence of non-compliance should be documented (e.g. mining in a wetland) and followed up. The issue is how to make this work in all sectors.

## **DEVELOPMENT OF THE IWQM STRATEGY**

Ms Reddy gave a presentation on the development of the IWQM Strategy.

A series of steps was followed in developing the WQM Policy and Strategy:

- Outcome 1: Consensus on prioritised water quality issues was preceded by a high-level description a prioritisation of water quality issues
- Outcome 2: Identification of WQM challenges and gaps was preceded by a root cause analysis, insights from a literature review and WQM SWOT analysis
- Outcome 3: Foundation for policy, strategy processes was preceded by the consolidation and way forward.

The core concept of the WQM Policy is that water quality affects the economy and society's well-being. Water quality is a developmental issue. DWS is the sector leader in WQM, but everyone has a role to play, and a joint approach between government departments, the private sector (through initiatives such as the Strategic Water Partners Network) and civil society forms the basis of tackling the water quality challenges facing the country.

The Policy is a collation of existing policies as they relate to WQM, with stakeholder inputs and a literature survey used to identify gaps. It draws on the 1991 Water Quality Management Policies and Strategies in the RSA, the 2006 Resource Directed Management of Water Quality Policy, the National Development Plan, the National Water Act (NWA), the National Water Resource Strategy, the UN Sustainable Development Goals (Agenda 2063), current DWS policies and other departmental policies, including those of the DMR, DEA, DAFF and DRDLR. It was developed based on the information from the Assessment phase, inputs from the project committees, and importantly, inputs from stakeholder discussions. It strengthens existing policy, but also proposes several new positions, the largest being that WQM need to be an inter-governmental responsibility, with DWS as the sector leader. It is hoped that further consultations will strengthen the policy even more.

The aim of the WQM Policy is to:

- Elevate water quality and water quality management on the country's agenda.
- Formalise and institutionalise a common approach to water quality management in South Africa.
- Support a consistent inter-departmental approach to how water quality is managed in the country.
- Support cooperative and integrated approaches to water quality management across sectors.
- Address operational aspects such as taking an integrated approach, broadening finance mechanisms and improving knowledge and information in the execution of the water quality management function.
- Provide a framework to realise improvements in water quality in key systems.
- Guide the development of an IWQM Strategy.

The WQM principles, Policy and Strategy are aligned in the following way:

The principles establish the fundamental norms, rules, or values that represent what is desirable to the country in terms of WQM. Principles form the foundation on which the policy is developed.

The Policy provides the overall vision and framework for how water quality should be managed in South Africa for at least, the next two decades.

The Strategy describes the prioritised strategic actions that need to take place over a five year horizon to realise the WQM envisaged by the policy, together with the enabling environment.

The implementation plan describes, roles, responsibilities, timeframes and resource requirements to achieve the strategic actions.

The roll-out of the implementation plan involves monitoring and reporting on implementation performance and the effect the Policy and Strategy implementation has had on water resources.

The 15 policy principles developed in the initial phase were structured around the four areas of governance, economic and finance, operational, and data and information. Several of the policy principles were new in respect of their application to WQM, namely those that are underlined in the following list:

- Governance
  - Principle 1: Government-wide water quality management
  - Principle 2: Subsidiarity and accountability
  - Principle 3: Transboundary water quality management
  - Principle 4: Partnerships
  - Principle 5: Administrative fairness and implementability
  - Principle 6: Administrative penalties (administered by DWS, not through the justice system)
- Economic and finance
  - Principle 7: Water quality is a developmental issue
  - Principle 8: Broadened funding principles
  - Principle 9: Polluter pays
- Operational
  - Principle 10: An integrated and adaptive approach
  - Principle 11: Hierarchies of water use and pollution management decision-making
  - Principle 12: Green/ecological infrastructure restoration and rehabilitation
  - Principle 13: Risk-based approach
- Data and information
  - Principle 14: Collection and protection of data
  - Principle 15: Publicly available information

The Policy is divided into four chapters, each of which describes the problem/challenge that needs to be resolved through the policy; the response to mitigate the challenge; and the principles to be adopted in responding to the challenge. The four chapters are:

- Chapter A: Inclusive WQM for South Africa
- Chapter B: Integrated, adaptive water quality regulation and management
- Chapter C: Financing IWQM
- Chapter D: Building the knowledge and capacity base

**Chapter A: Inclusive WQM for South Africa** deals with the need to see/understand the impact of water quality on the socio-economic and ecological development in the country; the need for an intra- and inter-departmental response to the WQM challenges in the country; some of the key policy aspects that must be addressed in achieving such an approach; and the need to build partnerships between government departments, civil society and the private sector in order to be able to successfully address the challenges. It addresses principles 1, 2, 4 and 7.

**Chapter 2: Integrated, adaptive water quality regulation and management** spells out the nature of an integrated approach to adaptive WQM and key policy framings of the integrated approach to regulation and adaptive management of water quality, including integrated, adaptive catchment planning, following a risk-based approach; and applying a hierarchy approach to decision-making. It addresses principles 3, 4, 5, 10, 11, 12 and 13.

**Chapter 3: Financing IWQM** examines the financial underpinnings of IWQM, looking at tools for financing the required actions, as well as the role of the private sector in this regard. It addresses principles 4, 6, 8 and 9.

**Chapter 4: Building the knowledge and capacity base** describes the policy with regard to the knowledge, human resource capacity and information base requirements to be able to implement the policy approaches. It addressed principles 4, 14 and 15.

It is tempting to believe that it is possible to follow a straight line from setting to achieving the desired objective, but in the real world this is never straightforward and the context is uncertain. Adaptive management therefore becomes a critical part of the process, necessitating ongoing monitoring and evaluation, and the periodic revision of the strategy and implementation plans.

Global good practice has shifted away from setting strategic plans with objectives to be set in a linear way. Global best practice in the private sector places less emphasis on sticking to a strategic plan than on building a rich and engaging corporate purpose; focuses less on formal structural design and more on effective management processes; is less concerned with controlling employees' behaviour than with developing their capabilities and broadening their perspective; and moves beyond the doctrine of strategy, structure and systems to a more organic model built on the development of purpose, process and people.

The challenge is to ensure that the IWQM strategy also builds the capability of people and institutions to manage in an adaptive and proactive manner that responds in a constructive way to the changing environment.

The strategic intent of the Policy and Strategy:

- Is aligned with the strategic objectives of the policy, while being consistent with broader water and development strategies (National Development Plan, NWRs2)
- Is focused on a short term timeframe, while building a platform for future strategies in line with the policy and visions for water quality management
- Prioritises a limited number of critical concerns, while ensuring that other issues are addressed through ongoing management or monitoring for future prioritisation
- Is relevant at national, catchment and local scales, while ensuring horizontal alignment across sectors and institutions at each scale
- Guides the actions/activities to be described in the implementation plans on a short-term basis
- Allows for adaptive response to changing circumstances and achievements based on effective ongoing monitoring and evaluation, during its timeframe.

The vision for WQM in South Africa is that government, in partnership with the private sector and civil society secure good water quality for all, forever.

The mission is to:

- Support a consistent interdepartmental approach to how water quality is managed in the country
- Support cooperation and integrated approaches to WQM across sectors, including civil society
- Adopt an adaptive management approach in which co-creation and co-learning by key players is entrenched
- Realise improvements in water quality in key systems
- Start to build capacity for longer-term improvement in water quality.

The goals of the WQM Policy and Strategy are:

Goal 1: Improved alignment of Policy, Strategy and legislation

Goal 2: Improved governance

Goal 3: Improved, efficient and effective WQM

Goal 4: Innovative finance

Goal 5: Improved knowledge and information management.

The goals are designed to address various strategic issues:

Goal 1: Improved alignment of Policy, Strategy and legislation

- Strategic issue 1: Harmonise policies and strategies to enable improved integrated WQM

- Strategic issue 2: Legislative review and amendments to enable integrated WQM

#### Goal 2: Improved governance

- Strategic issue 3: Improve integrated WQM institutional structuring
- Strategic issue 4: Formalise governance frameworks to support non-governmental engagements

#### Goal 3: Improved, efficient and effective WQM

- Strategic issue 5: Improve coordinated integrated planning
- Strategic issue 6: Strengthen integrated WQM regulation, compliance and enforcement
- Strategic issue 7: Applications of systems-based adaptive management approaches

#### Goal 4: Innovative finance

- Strategic issue 8: Improve and sustain fiscal support for integrated WQM
- Strategic issue 9: Develop pricing and incentive systems that support integrated WQM

#### Goal 5: Improved knowledge and information management

- Strategic issue 10: Strengthen monitoring and information management
- Strategic issue 11: Build water quality and WQM capacity through education, training and communication

Whilst there is a need to change our approach to WQM, it must be recognised that there is a well-conceived framework for WQM that needs to continue being implemented.

Implementation would involve:

- Fixing priority issues: This will provide the opportunity to realise success in addressing key issues and will embark on looking at rehabilitation or remediation in critical catchments. This will also entail looking at priority issues that can support the building of capacity and the on-going application of existing instruments.
- Building capacity: Whilst it is understood that the capacity that the water sector requires will not be in place within the short term, in terms of skills, integrated information and systems, this is an important issue that needs to be driven immediately and continued over time in order to build adaptive management capacity. This also includes the development of cooperative partnerships across government, private sector and civil society.
- Maintaining and sustaining the system: The on-going processes that the DWS has in place will continue to be utilised to manage water quality across the country. These instruments and systems may require strengthening over time. This could involve exploring ways in which to improve and simplify some of these instruments. This would include a drive to look at where instruments and systems can be integrated between departments in order to improve inter-departmental approaches.

## **Discussion**

Jenny Evans (DWS Operational Support) referred to the vision for WQM in South Africa, namely that government, in partnership with the private sector and civil society secure good water quality for all, forever. She commented that it was unusual not to include communities in the vision and suggested a possible reason for this was that WQM has to be pursued through an organised formation. Similarly, community involvement was not included in the WQM principles. She asked whether this had been done consciously.

Mr Weston responded that the partnerships with civil society are encouraged through the IWQM Strategy, and that civil society was considered as comprising organised groupings representing broader community interests.

Beatrice van der Merwe (Marico River Conservation Association) suggested that another role for civil society was for the older community members to share information of the status of water resources in the past (e.g. location of wetlands in the past).

Mr Weston responded that that was envisaged as an aspect of citizen-based monitoring and that there had been some such initiatives. For example, the University of KwaZulu-Natal did an assessment of rainfall data from Free State farmers and found it to be of better quality than data from the South African Weather Service, and to be further strengthened through the inclusion of valuable metadata.



Beatrice van der Merwe (Marico River Conservation Association) commented that the Marico River had ironically been found to flow more strongly in winter because there is less abstraction on the Highveld (due to fewer winter crops).

Mr Viljoen noted that the WRC has a miniSASS project on transboundary community-based biomonitoring and reporting which has been simplified to allow communities and school children to enter data. One of the best examples of a community water monitoring project was launched to respond to the problem of participants becoming ill from participation in full contact recreation events such as the Midmar Mile and the Duzi canoe marathon due to raw sewage pollution. 'Water warriors' were issued with vouchers for data and reported sewage spills to their local authority on a WhatsApp number via their cell phones. In this way, a record of spills and responses could be built up and proved successful in reducing spills. This is an example of how community-based monitoring and reporting can make a difference. It is important that an App such as used in this project should be linked to someone who will take action when spills are reported. It would be possible to build on such initiatives and repeat them elsewhere.

### **WORKSHOP 1: STRATEGIC ACTIONS: REVIEW AND PRIORITISATION**

Workshop participants worked together in teams. The objectives were to:

- Review of the strategic action list and comment and add anything that they felt was missing in the table.
- List ten critical actions that need to be addressed in the province to address water quality and its management
- List three critical actions that need to be addressed nationally to address water quality and its management

Teams recorded their responses in the Strategic Actions Table (see Appendix 3).

### **WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION**

Workshop participants worked together in the same teams as for Workshop 1. The objectives were to answer the following questions for the ten provincial actions that they had prioritised in Workshop 1:

- What are the activities required to achieve these in the province?
- Who are the key actors and what roles do they play?
- How do we ensure implementation?

Teams recorded their responses in on flipcharts, which were typed up as Appendix 4.

### **FEEDBACK DISCUSSION**

In the feedback from the groups, the importance of improved regulation, monitoring and building capacity were emphasised. Some of the more specific comments included:

- The techniques for monitoring must be standardised and stipulated in water use licences. It is important to be able to compare samples taken with the same technique.
- It is a national priority that licensing processes be streamlined.
- A one-stop shop for authorisation and permits must be housed in DWS.
- A risk-based approach to authorisations should be adopted.
- The NWA does not have prescriptive measures related to fines for non-compliance. DWS should develop spot fines.
- The Blue and Green Drop programmes are excellent tools. DWS should not 'reinvent the wheel' but just use them effectively.
- Strategic objective 11c (A well informed and actively engaged South Africa) cuts across all the other strategic objectives. When you are well informed you can be self-regulatory.

### **WAY FORWARD**

This was the last of the provincial roadshow workshops. There had been a workshop in each province.


The next steps in the process were as follows:

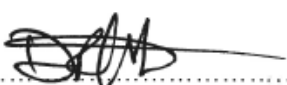
- Gazette Edition 1 of WQM Policy for comment and further revise the Policy to produce Edition 2 (final edition) based on further inputs from wider stakeholder groups (and the public) and the outcomes of the IWQM Strategy development process.
- Develop IWQM Strategy Edition 2 and Implementation Priorities based on inputs from provincial workshops, inputs from project committees and inputs from focused discussions with key stakeholder groups
- National Inter-Departmental Workshop, scheduled for November or December 2016
- National Symposium, scheduled for April 2017.

## CLOSURE

Mr Viljoen thanked everyone for their attendance and participation. He was particularly gratified at the recommendation of one of the groups that the highest priority was well informed and actively engaged citizens.

Doris Maumela (Acting CEO, DWS Limpopo North West Proto-CMA) thanked everyone for attending the workshop so that the parties could become well informed. She closed the workshop at 13:45.

  
 .....  
 DWS Project Manager  
 Pieter Viljoen  
 Scientist Manager: Water Quality Planning

  
 .....  
 PSP Team Leader  
 Derek Weston  
 Associate Director: Pegasys

Date: 25/01/2017

Date: 17/01/2017

**APPENDIX 1: LIST OF ACRONYMS**

CBO	Community-based organisation
CMA	Catchment management agency
CME	Control monitoring and enforcement
CMS	Catchment management strategy
COGTA	Department of Cooperative Governance and Traditional Affairs
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
DRDLR	Department of Rural Development and Land Reform
DWS	Department of Water and Sanitation
IDP	Integrated Development Plan
IWQM	Integrated water quality management
NGO	Non-governmental organisation
NWA	National Water Act
NWRS	National Water Resource Strategy
O&M	Operations and maintenance
PUCMA	Pongola-Umzimkulu Catchment Management Agency
RQO	Resource quality objective
SAPS	South African Police Service
SDG	Sustainable Development Goal
SWOT	Strengths, weaknesses, opportunities, threats
UK	United Kingdom
UN	United Nations
WDCS	Waste Discharge Charge System
WISA	Water Institute of Southern Africa
WQM	Water quality management
WRC	Water Research Commission
WSA	Water services authority
WUL	Water use licence
WULA	Water use licence application
WWTW	Wastewater treatment works

**APPENDIX 2: COMMENTS FOR THE COMMENTS REGISTER**

<b>Comment from North-West roadshow</b>	<b>Comment made by</b>
There is a relationship between water quality and quantity. Alien invasive vegetation impacts on water quantity and by default also on water quality, but addressing the impact of alien invasion vegetation does not seem to be part of the IWQM Strategy. This would require partnerships with DEA.	Beatrice van der Merwe (Marico River Conservation Association)
It is unusual not to include communities in the vision. Similarly, community involvement was not included in the WQM principles.	Jenny Evans (DWS Operational Support)

### APPENDIX 3: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 1 – STRATEGIC ACTIONS: REVIEW AND PRIORITISATION

T1: Ndivho Mphuma (DWS Limpopo North West Proto-CMA), AD (Doris) Maumela (DWS Limpopo North West Proto-CMA), Charlotte Tema (DWS), Thuli Letseka (Tlokwe City Council), Tshepo Dire (RB Plats)

T2: Not indicated, probably Lelanie du Preez (Glencore Rhovan Operations), Keneilwe Makwela (Glencore Western Mines), Lucky Motsoeneng (Glencore BHK), Lynette Tungwane (Glencore Western Mine), Stenly Makuwa (Tlokwe City Council), Kevin Khoze (DWS), Anna Malemela (DWS)

T3: Mahadi Mofoken (DWS), Lillian Siwelane (DWS), Irene van der Merwe (Marico River Conservation Association), Beatrice van der Merwe (Marico River Conservation Association), Shalene Janse van Rensburg (Midvaal Water Co)

T4: Peter Lentsoane (Platmin SA), Tania Rademeyer (Impala Platinum), Mmalenyalo Moeng (Union Mine Anglo American), Hlulani Chauke (Union Mine Anglo American), Kentse Mathiba (DWS Head Office), Mothusi Mafatshe (Pilanesberg Platinum Mines)

T5: Not indicated, probably Phillip Tjale (DWS), Tshepo Mathebe (DWS), Sepadi Motau (DWS), Abram Semata (Land Bank), Jenny Evans (DWS), Sebenzile Ntshangase (DWS)

#### THE IWQM STRATEGIC OBJECTIVES

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
<b>Strategic Issue 1:</b> Harmonization of Policies and Strategic to enable improved WQM	<b>SO1 a:</b> Policies and Strategies impacting upon IWQM are harmonized	T1: Ensure that policies and strategies impacting upon IWQM are harmonised T2: Clarity in terms of whether the policies and strategies are within DWS or across departments T3: Integration of policies and strategies from other governmental departments (Include eradication of invasive/alien vegetation). Political ideals to align with policies and realities T4: To align with other government departments and other sectors T5: SO2a – lack of integration between NWA and Water Services Act	T1: X T3: X T4: X	T3: X
<b>STRATEGIC ISSUE 2:</b> Legislative review and amendments to enable integrated WQM	<b>SO2a:</b> NWA/WSA effectively support integrated WQM	T1: Supported T2: No comment T5: SO4 – non-governmental and community engagement. Strategic issue does not align well with the objective	T4: X	
	<b>SO2b:</b> Other legislation effectively supports integrated WQM	T1: Supported “Other legislation effectively ensures integrated WQM T2: No comment	T4: X	
<b>STRATEGIC ISSUE 3:</b> Improved WQM institutional structuring	<b>SO3a:</b> DWS departmental structures support integrated WQM	T1: DWS departmental structures ‘support dedicated WQM’ T2: No comment T5: Legislation must enable swift actions/penalties for transgressions (SO2)		

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
	<b>SO3b:</b> Inter-sector departmental structures established to support integrated WQM	T1: Supported T2: No comment		
<b>STRATEGIC ISSUE 4:</b> Formalise governance frameworks to support non-governmental engagements	<b>SO4a:</b> Partnerships/stewardships established and maintained	T1: Supported T2: No comment		
	<b>SO4b:</b> Governance framework for active citizenry formalized	T1: Supported T2: No comment		
<b>STRATEGIC ISSUE 5:</b> Improved coordination in integrated planning	<b>SO5a:</b> Integrated sectoral planning approach is adopted at transboundary and national level	T1: 'Strengthen' (not adopt) integrated sectoral planning approach at transboundary and national level T2: No comment T5: Formalise coordination	T1: X T5: X	
	<b>SO5b:</b> Integrated sectoral planning approach adopted in catchment/regional plans	T1: 'Strengthen' (not adopt) integrated sectoral planning approach in catchment/regional plans T2: Developing techniques for sampling or guidelines	T2: X	T1: X
<b>STRATEGIC ISSUE 6:</b> Strengthen IWQM Regulation, Compliance and Enforcement	<b>SO6a:</b> Licencing processes streamlined	T1: Streamline water use authorisation process with other sector departments T2: Draft licence to be given to the applicant to avoid amendment T3: Address timeframe T5: Streamlining business processes between departments (alignment of authorising processes between departments)	T3: X T5: X	T5: X
	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	T1: Strengthen CME of all sectors T2: No comment T3: Regulatory enforcement for failures/poor scores regarding Blue Drop and Green Drop systems. Management system for law enforcement to ensure fair and correct actions/prevent corruption T5: Too big a gap between general limits and WULs (including the catchment)	T5: X	T2: X T3: X T4: X T5: X
<b>STRATEGIC ISSUE 7:</b> Application of Systems-based Adaptive Management Approaches	<b>SO7a:</b> Adaptive systems-based management is applied at catchment level	T1: Supported T3: Prioritising protection/management of sensitive water sources	T3: X	T2: X
<b>STRATEGIC ISSUE 8:</b> Fiscal support for integrated WQM	<b>SO8a:</b> WQM interventions are financially supported by the fiscus	T1: WQM interventions are financially supported by the fiscus and other funding mechanisms	T1: X T2: X	

STRATEGIC ISSUES	STRATEGIC OBJECTIVES	ADD/COMMENT	CRITICAL PRIORITIES	
			NATIONAL	PROVINCIAL
<b>STRATEGIC ISSUE 9:</b> Develop pricing and incentives that support integrated WQM	<b>SO9a:</b> The Waste Discharge Charge System is implemented	T1: Supported T2: Feasibility of WDCS will impact on the economy	T5: X	T1: X
	<b>SO9b:</b> Mechanisms for incentivising good practice developed	T1: Supported T3: Investigate other options than incentives only. Acknowledge actions that are 'above and beyond' T5: Consider mechanisms such as tax breaks	T5: X	
<b>STRATEGIC ISSUE 10:</b> Strengthen Monitoring and Information Management	<b>SO10a:</b> An integrated and functioning WQ monitoring network	T1: 'Establish' and integrated and functional water quality monitoring network T2: Database to load water quality results by sectors T3: Supply chain issues should not affect monitoring processes	T3: X	T2: X T5: X
	<b>SO10b:</b> Information systems that are current and accessible to support adaptive WQM	T1: Develop information systems and improve the current information system to support adaptive WQM T2: e.g. mines are monitoring streams; farmers' abstraction the same T3: Strengthening forums for information exchange		T3: X T4: X T5: X
	<b>SO10c:</b> Routine assessments inform adaptive WQM	T1: 'Ensure' (instead of 'inform') T2: No comment		T1: X
<b>STRATEGIC ISSUE 11:</b> Build WQ and WQM Capacity through Education, Training and Communication	<b>SO11a:</b> Sustained capacity for Government /CMA/sector to effectively manage and support WQM through improved education and training	T1: Supported T2: No comment		T2: X
	<b>SO11b:</b> WQM decisions are underpinned by best practice, research and innovation	T1: Supported T2: No comment		
	<b>SO11c:</b> A well informed and actively engaged South Africa	T1: Encourage participation in IWQM by all stakeholders T2: No comment T4: CBOs and NGOs engagements and end users		T4: X T5: X

**General Comments:**

## APPENDIX 4: TEAM FEEDBACK ON THE OUTCOMES OF WORKSHOP 2: IMPLICATIONS FOR IMPLEMENTATION

T1: Ndivho Mphuma (DWS Limpopo North West Proto-CMA), AD (Doris) Maumela (DWS Limpopo North West Proto-CMA), Sharlotte Tema (DWS), Thuli Letseka (Tlokwe City Council), Tshepo Dire (RB Plats)

	Strategic issue/objective	Activities	Key actors
1	<b>SO5b:</b> Integrated sectoral planning approach adopted in catchment/regional plans	<ul style="list-style-type: none"> <li>[SA21] Proto-CMA is in the process of developing CMS in which IWQM planning is one of the modules</li> <li>Proto-CMA conducting joint monitoring with Botswana on water quality and aquatic weeds (transboundary monitoring)</li> <li>Conducting routine water quality monitoring in different catchments</li> <li>[SA22] Joint monitoring with DEA on water quality and aquatic weeds</li> <li>Establish quarterly planning and assessment meetings with mining house (need to strengthen to other users)</li> </ul> <p>[SA23] DWS initiated municipal engagement through 'Kingfisher programme' where issues of WQM are discussed CMF established where WSAs are encouraged to include WQM in their planning (WSDP/IDP)</p>	
2	<b>SO9a:</b> The Waste Discharge Charge System is implemented	<ul style="list-style-type: none"> <li>[SA40] WDCCS has not yet been approved, therefore not yet implemented in the catchments. Proto-CMA currently doing CME</li> <li>[SA41] Proto-CMA will implement WDCCS in the WMA once approved</li> </ul>	
3	<b>SO10c:</b> Routine assessments inform adaptive WQM	<ul style="list-style-type: none"> <li>[SA45] Proto-CMA developed monitoring programme. Frequency = monthly and on a needs basis (emergencies). Joint monitoring with DEA</li> </ul>	



	Strategic issue/objective	Activities	Key actors
		<ul style="list-style-type: none"> <li>and Botswana done quarterly</li> <li>River ecosystem monitoring (River Health Programme) done quarterly (Crocodile, Hennops, Apies, Marico, Molopo, Hex, Jukskei, Ngotwana)</li> </ul>	

T2: Not indicated, probably Lelanie du Preez (Glencore Rhovan Operations), Keneilwe Makwela (Glencore Western Mines), Lucky Motsoeneng (Glencore BHK), Lynette Tungwane (Glencore Western Mine), Stenly Makuwa (Tlokwe City Council), Kevin Khoze (DWS), Anna Malemela (DWS)

	Strategic issue/objective	Activities	Key actors
1	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	Standardise sampling techniques for WQM (SABS)	<ul style="list-style-type: none"> <li>All sectors: DWS to lead the project and other sectors support</li> <li>Framework</li> </ul>
2	<b>SO7a:</b> Adaptive systems-based management is applied at catchment level		
3	<b>SO10a:</b> An integrated and functioning WQ monitoring network		

T3: Mahadi Mofoken (DWS), Lillian Siwelane (DWS), Irene van der Merwe (Marico River Conservation Association), Beatrice van der Merwe (Marico River Conservation Association), Shalene Janse van Rensburg (Midvaal Water Co)

	Strategic objective	Activities	Key actors
1	<b>STRATEGIC ISSUE 1:</b> Harmonization of Policies and Strategic to enable improved WQM	<ul style="list-style-type: none"> <li>Integration of political ideals and various governmental departments with regard to policies and strategies</li> <li>Orientation training on all political and implementation levels</li> </ul>	
2	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	<ul style="list-style-type: none"> <li>Regulatory enforcement, including a control system for the regulatory enforcement, for failures/non-compliance (BDS and GDS)</li> <li>Implementing a control system and legal action</li> </ul>	
3	<b>SO10b:</b> Information systems that are current and accessible to support adaptive WQM	<ul style="list-style-type: none"> <li>Strengthening forums for information exchange</li> <li>Feedback between forums and community/social groups – must be</li> </ul>	

	Strategic objective	Activities	Key actors
		solution driven! • Holistic case study – Marico River catchment area	

T4: Peter Lentsoane (Platmin SA), Tania Rademeyer (Impala Platinum), Mmalenyalo Moeng (Union Mine Anglo American), Hlulani Chauke (Union Mine Anglo American), Kentse Mathiba (DWS Head Office), Mothusi Mafatshe (Pilanesberg Platinum Mines)

	Strategic objective	Activities	Key actors
1	<b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	• Gap analysis • Self-regulation and compliance monitoring by local authorities	
2	<b>SO10b:</b> Information systems that are current and accessible to support adaptive WQM	• Access to and protection of information • Create user-friendly database	
3	<b>SO11c:</b> A well informed and actively engaged South Africa	• Self-regulating competent government working together with NGOs and CBOs to make it easy for end-users to identify the gaps so that government can know community challenges – promoting easy access to legislation	

T5: Not indicated, probably Phillip Tjale (DWS), Tshepo Mathebe (DWS), Sepadi Motau (DWS), Abram Semata (Land Bank), Jenny Evans (DWS), Sebenzile Ntshangase (DWS)

	Strategic issue/objective	Activities	Key actors
1	<b>SO6a:</b> Licencing processes streamlined <b>SO6b:</b> Targeted/strengthened compliance monitoring and enforcement of key polluting sectors	• Develop one-stop shop for authorisations (WULAs, mining permits, environmental) housed in DWS because of centrality of water in all economic activities • Adopt a risk-based approach to authorisations and certificates • Develop and implement spot fines for transgressions	
2	<b>SO10a:</b> An integrated and functioning WQ monitoring network <b>SO10b:</b> Information systems that are current and accessible to support adaptive WQM <b>SO10c:</b> Routine assessments inform adaptive WQM	• More creative use of IT platforms (social media, Apps) • Include/integrate data from external stakeholders into DWS integrated water quality management system	
3	<b>SO11a:</b> Sustained capacity for	• Develop a clear career	

	<b>Strategic issue/objective</b>	<b>Activities</b>	<b>Key actors</b>
	<p>Government /CMA/sector to effectively manage and support WQM through improved education and training</p> <p><b>SO11b:</b> WQM decisions are underpinned by best practice, research and innovation</p> <p><b>SO11c:</b> A well informed and actively engaged South Africa</p>	<p>path for WQM staff</p> <ul style="list-style-type: none"> <li>• Intensify capacity building/awareness campaigns for community members</li> <li>• Run formal workshops with senior municipal members/decision-makers</li> </ul>	

## **APPENDIX D-3**

### **NATIONAL INTER-DEPARTMENTAL WORKSHOP**



## DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT STRATEGY (IWQMS) - WP10978

### IWQMS Inter-Departmental Workshop

10<sup>th</sup> February 2017 | Protea Hotel Centurion | 09h00 – 16h00

#### AGENDA

**Chairperson:** Ms D Mochotlhi

**Purpose of Workshop:**

- Introduce the initiative to revise SA's WQM Policy and develop an IWQM Strategy;
- Provide an overview of the main outcomes and implications of the IWQM Strategy;
- Determine how to collaboratively support the IWQM Strategy;
- Discuss the modalities for establishing an Inter-Departmental WQM approach; and
- Map the way forward.

Item	Time	Topic	Responsible
	09h00 – 09h30	Arrival Tea and Coffee	
1	09h30 – 09h45	Welcome, Introductions and Purpose of the Meeting	Chair
2	09h45 – 10h05	State of WQ and WQM in South Africa ▪ <i>Discussion</i>	DWS Project Team All
3	10h15 – 11h00	Overview of the proposed WQM Policy ▪ <i>Policy Principles and Responses</i> ▪ <i>Policy Shifts and Implications</i> ▪ <i>Discussion</i>	DWS Project Team All
4	11h00 – 11h45	Overview of the proposed IWQM Strategy ▪ <i>Strategic Intent, Goals and Objectives</i> ▪ <i>Discussion</i>	DWS Project Team All
5	11h45 – 12h00	Case Study – External audits and the implications for Government	Ms L van der Walt
	12h00 – 12h15	<b>Tea</b>	
6	12h15 – 13h15	<b>Workshop 1:</b> WQ concerns affecting National Departments	Facilitator: Pegasys
	13h15 – 14h00	Lunch	
7	14h00 – 15h30	<b>Workshop 2:</b> Departmental interfaces with IWQM Strategic Actions: Sector Roles and Responsibilities	Facilitator: Pegasys
8	15h30 – 15h50	Planning the Inter-Departmental WQM Approach	All
9	15h50 – 16h00	Way forward and Closure	Chair



## water & sanitation

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA

### DEVELOPMENT OF AN INTEGRATED WATER QUALITY MANAGEMENT (IWQM) STRATEGY (WP10978)

#### MINUTES OF IWQMS INTER-DEPARTMENTAL WORKSHOP 10 February 2017, Protea Hotel, Centurion, 09:00–14:00

##### Present:

Werner Heydenreich	COGTA, Municipal Settlements Planning
Nomvuzo Mjadu	DAFF, Water Use and Irrigation Development
Palo Kgasago	DAFF, Water Use and Irrigation Development
Emanuel Marumo	DHET, Skills SPU
Aubrey Matshego	DHS
Mahlatse Modiba	DHS, Human Settlement Planning
W Nkosi	DHS, Programme and Project Planning
Alinah Mthembu	DoH, Climate Change Adaptation
Aneliswa Cele	DoH, Environmental Health
Mary Madaure	DoH, Environmental Health Services
Joan Arrikum	DPE, Economic Impact & Policy Alignment, Environmental Policy Alignment
Mukondi Masithi	DPME, Outcome 10 NPC Policy & Research
Mthokozisi Tshuma	DPME, Planning
Gareth Muthumuni	DPME, Planning Branch
Magamage Mange	DST, Sector Innovations and Green Economy
Moloko Matlala	DWS, Information Programmes
Nkhumeleni Musekene	DWS, P&I
Deborah Mochotlhi	DWS, P&I (Chairperson)
Beason Mwaka	DWS, Planning Systems
Marie Brisley	DWS, Policy
Magda Ligthelm	DWS, Strategy
Jackie Jay	DWS, WQPS
Pieter Viljoen	DWS, WQPS
Lizette van der Walt	Environmental Legal Consultant
Albert Marumo	Gauteng Department of Health, Environmental Health
Senzo Nkala	NDoT, Policy Planning
Sara Bopade	NDoT, Policy Planning and Development
Derek Weston	Pegasys
Traci Reddy	Pegasys
Robyn Arnold	Project team

##### WELCOME, INTRODUCTIONS AND PURPOSE OF THE MEETING

Mr Mwaka opened the meeting and welcomed everyone. The chairperson, Ms Mochotlhi, thanked everyone for their attendance and allowed a round of introductions.

Ms Mochotlhi explained that the Department of Water and Sanitation (DWS) wanted to partner with other government departments to improve water quality in South Africa. Departments that have a role to play in delivering water quality had been invited.

DWS had embarked on the journey of developing the Integrated Water Quality Management Strategy (IWQMS). The problem statement and imperative to act were due to the decline in water quality. There had been some efforts to curb the decline (including policy, strategy and action), but the efforts

did not seem to be yielding the requisite results. The decline in water quality was happening at a time when the country was talking of radical economic transformation in South Africa as a developing state. Given the myriad of problems that the country was facing, water quality could not be allowed to deteriorate any further.

The DWS State of Water Report contributes to the DEA's State of the Environment Report. Both reports acknowledge the water quality problems and the need for improvement.

The IWQMS project started with the review of water quality policy, resulting in the development of 15 fundamental principles, which are embodied in the current edition of the IWQM Strategy. There have been a number of stakeholder engagements in reviewing the Policy and developing the Strategy thus far, but it does not seem that professionals in the public and private sectors or civil society understand the importance of water quality, given the relatively poor attendance of stakeholders at the provincial workshops. The water quality challenges are exacerbated by the fact that South Africa is a water-scarce country. The relative lack of stakeholder interest in water quality is cause for concern and a renewed call to action, not despondency.

The IWQM Strategy has five goals, 11 strategic issues and 58 strategic actions to be implemented, one of which is to institutionalise water quality in all spheres of government. The core message is that government, in particular DWS, cannot do this alone. Other government departments have therefore been invited to be part of the solution. The issues that contribute to poor water quality underscore the need for cooperation. The necessary tools and knowledge are available to effect significant change to the current water quality. The solution lies in coordinated effort and efficient action from government, civil society and the private sector.

The WQM Policy has to be finalised by the end of March 2017. The input of government departments on the current version of the Policy document was invited. The workshop would provide an overview of the main outcomes and implications of the IWQM Strategy and determine how the various government departments could collaborate. Modalities would be discussed for establishing an inter-departmental water management approach, and the way forward would be mapped together.

These initiatives were taking place while the country was expected to deliver on the Sustainable Development Goals (SDGs). SDG 6 focuses particularly on water; subgoal 6.3 specifically addresses improving water quality (i.e. 'By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally'). DWS would call on other departments to help deliver on SDG 6. During the process, stakeholders would be identified.

Mr Viljoen emphasised that water quality is everyone's responsibility. Government must agree on the solution to the water quality problem, and DWS needs the support of all government departments in addressing the issues.

## **STATE OF WATER QUALITY AND WATER QUALITY MANAGEMENT (WQM) IN SOUTH AFRICA (presentation by Jacqueline Jay, DWS)**

Ms Jay gave an overview of the state of water quality and water quality management (WQM) in South Africa.

Water of a good quality is fundamental to food and energy security, economic growth (construction, manufacture, tourism etc.), maintaining health and wellness, and sustaining livelihoods. Globally, the availability of good quality water is considered a condition for alleviating poverty. Water pollution has a direct impact on economic growth, human health, ecosystems, job creation and the cost of doing business.

The costs associated with poor water quality include reduced crop yields, treating affected water, health-related costs to the public and private health system from diseases related to polluted water, clearing of water ways and drainage systems, tourism losses and loss of ecosystem functions.

A study in 2010 investigated the economic effects of pollution by using econometric models (Plus Economics in 2010). The study found that economic growth is negatively affected, and poverty is the

worst-affected criterion, which, concomitant with a fall in household consumption expenditure, indicates a severe diminution in the socio-economic position of South African citizens. The study also found an intensified drop in employment and decreased international competitiveness.

The term 'water quality' is used to describe the chemical, physical, biological and aesthetic characteristics (properties) of water, usually in respect to its suitability for an intended purpose or use. These characteristics are controlled or influenced by substances, which are either dissolved or suspended in water. Thus when we say water is polluted, it means it has certain characteristics that make it unfit for its intended use or it has the potential to cause harm (to people and their health, safety and welfare; to the environment; or to property).

The sectors in South Africa that rely on good water quality and/or have an impact on water quality include mining and industry, agriculture, recreation, the environment, domestic use and health.

The water quality management cycle starts with rivers and aquifers. The quality of water in rivers and aquifers affects the quality of the water that end users receive (e.g. the quality of water in domestic taps, and for agriculture, manufacturing processes and recreational purposes such as fishing, boating or canoeing). When the water we use re-enters the system (through run-off or direct discharge), it affects the quality of the water which a user receives downstream. This dynamic has influenced the management approach.

The DWS manages water quality in South Africa's water resources by setting management objectives in the water resource that aim to balance the need for upstream use and development with the need to ensure that water is fit for use by downstream users. To achieve this, measures must be put in place to control upstream substances that enter the resource and travel through it. Such measures include legislation, policies and strategies, monitoring and information management programmes, partnerships, education, technology and innovation.

Evidence suggests that the quality of our water and the way we manage it needs to improve. A study by DWS in 2010 of the national state of water quality found that South Africa was complying with only 17% of the water quality objectives. The most non-compliant constituents were salts and nutrients. A more recent study by Statistics South Africa (the National River System Accounts Study) found that the river health of all South Africa's catchments had declined between 1999 and 2000; the most affected catchment was Limpopo. One of the main drivers of the decline of our river health is due to the water quality challenges we are facing. The extent of rivers with a large degree of modification to water quality more than doubled between 1999 and 2011.

The most predominant constituents of concern in South Africa are nutrients, salts, microbial contamination, urban runoff and litter. Other issues that have been identified are acidification, siltation/sedimentation, heavy metals, persistent organic pollutants (POPs) (including agro-chemicals), radiation, thermal pollution and nano-particle pollution. For many of these, the exact extent at a national scale is unknown. The spatial distribution of water quality issues differs between catchments across the country depending on land use activities. Each sector contributes its own 'signature' of pollutants. The main contaminants associated with the various sectors are:

- Mining: salts, pH changes (acidification), metals, toxins, radiation
- Urban activities: toxins, nutrients, salts, microbial contaminants
- Agriculture: salts, nutrients, microbial contaminants, toxins and POPs (pesticides, herbicides)
- Industry: salts, thermal contamination, toxins and POPs

South Africa faces many of the problems related to poor water quality; largely attributed to the challenges of managing the various sources of pollution, including air pollution, agricultural drift and run-off, industrial wastewater discharges, urban run-off, challenges with managing run-off from unserviced areas, challenges with managing mine water and challenges with managing sewage water.

These challenges have been investigated in detail. Some of the key root causes, as identified by DWS provincial officials as well as from the literature are vandalism of infrastructure; dysfunctional wastewater treatment works; lack of sufficient maintenance plans; poor budgeting; lack of adequate or appropriate urban planning; lack of sufficient formal sanitation in all informal settlements; destruction of ecological infrastructure (wetlands); flow regime changes (causing less dilution capacity); use of



inappropriate land management practices; lack of adequate litter control and prevention measures; lack of sufficient institutional, technical and financial capacity; intricate procurement processes (government is slow to react); ineffective monitoring; uncontrolled discharges from abandoned mines and runoff from discarded mine dumps (legacy issues); inadequate financial provisioning for rehabilitation; insufficient precautionary planning, regulation and enforcement; insufficient compliance with licence conditions; inappropriate licence conditions; inadequate enforcement capacity; land degradation and over-grazing; inappropriate fertilisation practices and over-fertilisation; over-irrigation and inappropriate irrigation technology; lack of sufficient awareness-creation programmes on water pollution and lack of sufficient incentives to treat water or support from government to use alternative technology.

Key elements that exacerbate the water quality challenges include:

- Lack of the necessary alignment and coordination within and between government departments: WQM is hampered by poor coordination and conflicting approaches
- Lack of the necessary finance for WQM: The financial resources available are insufficient and do not recognise the investment required to counteract economic harm.
- Lack of sufficient data and information management: Data sharing is a challenge, including transboundary management. There are challenges in ensuring that the public has access to information
- Lack of sufficient capacity and skills.

Future trends and impacts on water quality in South Africa are anticipated to include climate change, unconventional gas exploration, population growth and increased issues with the water–energy–food security nexus, growth of inadequately serviced densely populated settlements and growth in water re-use. There is, however, still an opportunity to manage the water quality risks appropriately through proper investments, advancements, management actions and decisions. In response to the country's need to take an improved integrated approach to water quality management, DWS initiated a project to revise its current WQM policies and develop a national Integrated Water Quality Management Strategy.

The project has five phases, the first two of which have been completed. Phases 3 and 4 are currently running:

1. Inception (Clarify the expectations and scope for the project): Completed between October 2016 and January 2016
2. Assessment (Comprehensive literature survey; Identification of water quality and WQM challenges in South Africa): Completed between January and March 2016
3. Policy (Define policy principles; Revise, update and integrate existing WQM policies): August 2016 to February 2017
4. Strategy (Revise, update and integrate existing WQM strategies based on inputs from stakeholders and the Assessment Phase): August 2016 to February 2017
5. Policy into Practice (Develop a pragmatic plan to implement, monitor and evaluate the execution of the Policy and Strategy): November 2016 to July 2017.

## **OVERVIEW OF THE PROPOSED WQM POLICY (presentation by Marie Brisley)**

Ms Brisley emphasised the need for a paradigm shift to protect water quality into the future. Water quality and water quantity are closely linked. Poor quality water becomes unusable for certain purposes, or more expensive to treat to an acceptable standard. Acid mine drainage, for example, could be treated to potable standard, but at an immense cost and funding would be an issue. Poor quality water also has significant health costs. These costs are preventable if water quality is properly managed. DWS identified the need to review and integrate current policies on water quality, and to elevate water quality to a higher priority.

Water quality affects the economy and society's well-being and is a developmental issue. Although the DWS is the sector leader in WQM, everyone has a role to play. A joint approach between government departments, the private sector (through initiatives such as the Strategic Water Partners Network) and civil society forms the basis of tackling the water quality challenges facing the country. Water quality is everyone's responsibility.

The WQM Policy is a collation of existing policies as they relate to WQM, with stakeholder inputs and a literature survey used to identify gaps. It draws on the 1991 WQM policy, the 2006 Resource Directed Management of Water Quality (RDMWQ) Policy, the National Development Plan, the National Water Act, the National Water Resource Strategy (NWRS), the Sustainable Development Agenda (SDGs, Agenda 2063), current DWS Policies (such as the Mine Water Policy) and other departmental policies (DMR, DEA, DAFF, DAFF, DRDLR, etc.). It strengthens existing policy but also proposes some new positions, the foremost being that WQM needs to be an inter-governmental responsibility, with DWS as the sector leader. It is hoped that future consultations will strengthen the policy even further. The WQM Policy will be approved at the highest level by Cabinet. This high-level approval will facilitate the allocation of resources to implement the Policy.

The aim of the WQM Policy is to:

- Elevate water quality management on the country's agenda and ensure that resource allocation mirrors the importance of improving national water quality
- Formalise and institutionalise a common approach to water quality management in South Africa
- Support a consistent inter-departmental approach to water quality management in the country.
- Support cooperative and integrated approaches to water quality management across sectors
- Address operational aspects such as taking an integrated approach, broadening finance mechanisms, and improving knowledge and information in the execution of the water quality management function
- Provide a framework to realise improvements in water quality in key systems
- Guide the development of an IWQM Strategy.

The WQM principles, Policy and Strategy are aligned in the following ways:

- The Policy provides the overall vision for WQM in South Africa and sets out the fundamental norms, rules or values that represent what is desirable to the country in terms of WQM. The Policy is based on a revision of existing policies. It strengthens existing policy but also proposes some new positions.
- The Strategy describes the prioritised strategic actions that need to take place over the short, medium and long term in order to realise the WQM vision set by the policy. Is aligned with broader water and development strategies (e.g. National Development Plan, NWRS-2, Groundwater Strategy, SDGs)
- The Implementation Plan describes roles, responsibilities, timeframes and resource requirements to achieve the priority strategic actions. Performance monitoring and continuous review are required during the roll out of the Implementation Plan to ensure success.

The WQM Policy is based on 15 policy principles structured around the four pillars of governance, economic and finance, operational, and data and information. Several of the policy principles were new in respect of their application to WQM, namely those that are underlined in the following list:

- Governance
  - Principle 1: Government-wide water quality management
  - Principle 2: Subsidiarity and accountability
  - Principle 3: Transboundary water quality management
  - Principle 4: Partnerships
  - Principle 5: Administrative fairness and implementability
  - Principle 6: Administrative penalties (administered by DWS, not through the justice system)
- Economic and finance
  - Principle 7: Water quality is a developmental issue
  - Principle 8: Broadened funding principles
  - Principle 9: Polluter pays
- Operational
  - Principle 10: An integrated and adaptive approach
  - Principle 11: Hierarchies of water use and pollution management decision-making
  - Principle 12: Green/ecological infrastructure restoration and rehabilitation
  - Principle 13: Risk-based approach
- Data and information
  - Principle 14: Collection and protection of data
  - Principle 15: Publicly available information

The Policy sets forth the following vision for WQM in South Africa: 'Government, in partnership with the private sector and civil society, secure good water quality, for all, forever'. This is given effect through a mission based on five key points:

- Support a consistent inter-departmental approach
- Support cooperative and integrated approaches to WQM across sectors, including civil society
- Adopt an adaptive management approach in which co-creation and co-learning by key players is entrenched
- Realise improvements in water quality in key systems
- Start to build capacity for longer-term improvement in water quality.

The mission is supported by the WQM Policy Responses, which informed the goals of the IWQM Strategy:

- Policy Response A: Inclusive Approach, which deals with the need for a government-wide response to the WQM challenges in the country, as well as the need to build partnerships between government, civil society and the private sector in order to successfully address the challenges.
- Policy Response B: Integrated, Adaptive WQM, which provides a framework for an integrated, risk-based and adaptive approach to the management of water quality.
- Policy Response C: Financing WQM, which examines the financial underpinnings of IWQM, looks at tools for financing the required actions, as well as the role of the private sector in this regard.
- Policy Response D: Building the Knowledge and Capacity Base, which describes the policy with regard to the knowledge, human resource capacity and information requirements to achieve integrated WQM.

These WQM Policy Responses have the following policy implications:

- Policy Response A: Inclusive approach, requires (1) the support of all role players, such as the government, private sector and civil society and (2) the alignment of policies to support the WQM Policy (NEMA, CARA, MPRDA etc.)
- Policy Response B: Integrated, Adaptive WQM, requires (1) a more integrated and adaptive approach across sectors, (2) and an agreed approach for inter-departmental collaboration and coordination.
- Policy Response C: Financing WQM, requires (1) more focused discussions with National Treasury and sectors on how to effectively support WQM, and (2) an agreed approach on using limited resources more efficiently to support WQM.
- Policy Response D: Building the Knowledge and Capacity Base, requires (1) transparency in sharing information to support effective monitoring, enforcement and reporting, and (2) the development of water quality and WQM capacity across sectors and at different levels.

Other policies linked to the WQM Policy include the National Sanitation Policy (the review was approved in December 2016), Mine Water Management, Climate Change, Wetlands and Stewardship.

## **Discussion**

Lizette van der Walt (Environmental Legal Consultant) referred to the Western Cape's Sustainable Water Management Plan. The provincial government is very committed to the plan, but most of the tasks fall outside the provincial legislative mandate. Many government institutions, particularly at provincial level, do not seem to have a firm understanding of their own enabling legislation. They tend to take tasks upon themselves for which they do not have the required enabling legislation, which renders those activities as illegal administrative action. They are not always aware of the powers assigned to MECs. Despite the commitment of provincial government, there is a lack of assigned or delegated responsibility. Consultants sometimes further mislead them.

Mr Viljoen responded that Ms van der Walt's observations implied that DWS could not expect departments to do more than their legislated mandate.

Alinah Mthembu (DEA) referred to Policy Principle 8 (Broadened funding principles) and cautioned about the way in which language is used when talking about the possibility of partnerships with the

private sector. Government needs to shift from talking about 'funding' to talking about 'financing', which goes beyond funding and could include sponsorship. There are many mechanisms to improve water quality, but the cost implications are always a challenge.

Magamage Mange (DST) asked whether there would be a platform for other departments to input data.

Moloko Matlala (DWS Information Programmes) responded that DWS was developing the National Integrated Water System (NIWS), which would take information from the department's various databases (e.g. HYSTRA, WARMS). The intention is to ensure that people who collect water data also collect sanitation data. There is robust engagement in developing a database for sanitation data. The vision is to integrate data in NIWS and make it accessible to the public via a dashboard to meet particular stakeholder needs, including the needs of DWS as well as the broader water sector (e.g. water boards, local government).

Mr Weston commented that one of the purposes of the current workshop was to embark on a journey of discovery with other government departments, to start to build bridges and to consider how to do this more formally, since DWS is not aware of all the data systems or needs related to water.

Mahlatse Modiba (DHS) asked whether the CSIR had been consulted on the WQM Policy. The DHS together with the CSIR was reviewing the 'Red Book' (Guidelines for Human Settlement Planning and Design). Proposals had been invited to update the section on sanitation and water supply. Sector departments had been consulted, and the DHS was waiting for them to provide draft chapters for each section of the Red Book. Ms Modiba recommended that the CSIR should be invited to the next inter-departmental meeting on the IWQM Strategy.

Ms Weston responded that such suggestions were important in building bridges between sectors and departments and establishing a community of practice.

Senzo Nkala (NDoT) commented that the proposed WQM Policy was in line with some of the initiatives of the NDoT. The department had developed Responsible Tourism Guidelines in the three main areas of social, economic and environmental. Issues related to waste disposal had been highlighted in the guidelines. Many hotels promote responsible water use (e.g. encouraging guests to conserve water, not putting unused towels out for washing, promoting recycling). Mr Nkala suggested that the IWQMS project should make contact with those officials in the NDoT involved with the Responsible Tourism Guidelines as well as the Oceans Economy initiative. Water quality has a direct impact on tourist attractions on land and sea.

Albert Marumo (Gauteng Department of Health) commended the proposed integrated water quality management. Government departments and the private sector tend to work in silos. DWS, water services authorities and municipalities each have their own way of monitoring water. The IWQMS project was right in proposing a single standard for water quality rather than disparate efforts. Mr Marumo was concerned that the Blue Drop programme pertained only to certain stakeholders, which highlights the existence of different standards for water quality in government and the private sector.

Ms Mochotlhi (DWS P&I) commented that it was a misperception that standards differed across the country. She explained that the Blue Drop programme was a voluntary regulatory tool. As water users, water services authorities (WSAs) have an obligation in terms of the National Water Act to provide data to DWS. The purpose of the Blue Drop programme was to evaluate and rate water quality in the entire system (as opposed to complying with drinking water standards, for example). For those municipalities and WSAs that do not comply, DWS looks at the causes and tries to provide support without any clear prescription of how far the department will go. WSAs tend to take a back seat when DWS intervenes.

Mary Madaure (Department of Health) commented that government was learning the concept of shared responsibility, and departments were all aiming towards the same goals. DoH had recently published Norms and Standards on Water Quality Monitoring and would like to see synergy with the IWQMS in the interests of improved health in the country. She commended the efforts of DWS towards data integration. DoH has data on its own health indicators that do not fit into the system. DoH was considering how best to play its role of monitoring water quality in WSAs.

Mr Viljoen suggested the need to further discuss and explore the implications of legislative mandates. If government departments are to play an integrated water quality function, the legislative constraints need to be understood.

## **OVERVIEW OF THE PROPOSED IWQM STRATEGY (presentation by Derek Weston, Pegasys – Project team)**

South Africa is facing rapidly deteriorating water quality, with severe impacts on the economy, livelihoods and key environmental resources. DWS is responsible and accountable for water quality in South Africa but cannot do everything that is required on its own. DWS will have to work together with other government departments within their various mandates in a spirit of cooperative governance. The IWQM project brings together previous policy positions of the DWS and introduces some new policy positions, which government will have to address collectively. The proposed IWQM Strategy takes the WQM Policy towards action, and the more detailed Implementation Plan will be developed during the next few months. DWS needs other government departments to be part of the Implementation Plan if the WQM Policy is to have the desired impact.

Policy is developed for a long timeframe (e.g. 25 years). Strategies give effect to the policy over shorter timeframes (e.g. five years). Implementation plans are then developed and updated more regularly in order to take a strategic and adaptive approach.

It is tempting to believe that it is possible to follow a straight line from setting to achieving the desired objective, but in reality this is never straightforward and the context is uncertain. Adaptive management therefore becomes a critical part of the process of managing scarce natural resources, necessitating ongoing monitoring and evaluation, and the periodic revision of the strategy and implementation plans.

Global good practice has shifted away from strategic plans with objectives set in a linear way. Global best practice in the private sector places less emphasis on sticking to a strategic plan than on building a rich and engaging corporate purpose; focuses less on formal structural design and more on effective management processes; is less concerned with controlling employees' behaviour than with developing their capabilities and broadening their perspective; and moves beyond the doctrine of strategy, structure and systems to a more organic model built on the development of purpose, process and people.

The challenge is to ensure that the IWQM Strategy also builds the capability of people and institutions to manage in an adaptive and proactive manner that responds constructively and with a common purpose to the changing environment.

The strategic intent of the Strategy:

- Is aligned with the strategic objectives of the policy, while being consistent with broader water and development strategies (National Development Plan, NWRS2)
- Is focused on a short term timeframe, while building a platform for future strategies in line with the policy and vision for water quality management
- Prioritises a limited number of critical concerns, while ensuring that other issues are addressed through ongoing management or monitoring for future prioritisation
- Is relevant at national, catchment and local scales, while ensuring horizontal alignment across sectors and institutions at each scale
- Guides the actions/activities to be described in the implementation plans on a short-term basis
- Allows for an adaptive response to changing circumstances and achievements based on effective ongoing monitoring and evaluation during its timeframe.

The vision for WQM in South Africa is that government, in partnership with the private sector and civil society, secure good water quality for all, forever.

The mission is to:

- Support a consistent interdepartmental approach to how water quality is managed in the country
- Support cooperation and integrated approaches to WQM across sectors, including civil society

- Adopt an adaptive management approach in which co-creation and co-learning by key players is entrenched
- Realise improvements in water quality in key systems
- Start to build capacity for longer-term improvement in water quality.

The five goals of the WQM Policy and Strategy are spread across three main areas:

Enabling	Goal 1: Improved alignment of Policy, Strategy and legislation
	Goal 2: Improved governance
Implementing	Goal 3: Improved, efficient and effective WQM
Supporting	Goal 4: Innovative finance
	Goal 5: Improved knowledge and information management.

The goals are designed to address each of the Strategic Issues identified in the Assessment Phase of the project:

Goal 1: Improved alignment of Policy, Strategy and legislation

- Strategic issue 1: Harmonise policies and strategies to enable improved integrated WQM
- Strategic issue 2: Legislative review and amendments to enable integrated WQM

Goal 2: Improved governance

- Strategic issue 3: Improve integrated WQM institutional structuring
- Strategic issue 4: Formalise governance frameworks to support non-governmental engagements

Goal 3: Improved, efficient and effective WQM

- Strategic issue 5: Improve coordinated integrated planning
- Strategic issue 6: Strengthen integrated WQM regulation, compliance and enforcement
- Strategic issue 7: Applications of systems-based adaptive management approaches

Goal 4: Innovative finance

- Strategic issue 8: Improve and sustain fiscal support for integrated WQM
- Strategic issue 9: Develop pricing and incentive systems that support integrated WQM

Goal 5: Improved knowledge and information management

- Strategic issue 10: Strengthen monitoring and information management
- Strategic issue 11: Build water quality and WQM capacity through education, training and communication

The 11 strategic issues have been broken down into 21 strategic objectives, which will take effect through 58 strategic actions.

Developing a strategy requires decisions. Some of the key questions that were asked to facilitate decision-making related to the IWQM Strategy were:

- What are the biggest problems that we need to fix?
- What are the foundational activities that will improve our ability to deliver in future?
- What will result in the biggest impact and how do we allocate resources to achieve that impact?
- What can we realistically, yet with ambition, achieve in the short term, given the financial and human resource constraints?
- What are the preferred ways to meet the objectives?
- Who are the key players and what are their roles?

In determining what to do first and what needs to be prioritised, there are some things that need to be fixed, some that need to be improved and some that need to be done to help others to do their work better in the long term:

- Fix the priority issues: This will provide the opportunity to realise success in addressing key issues and will embark on looking at rehabilitation or remediation in critical catchments.
- Maintain and sustain the system: The ongoing processes that DWS has in place will continue to be utilised to manage water quality across the country. These instruments and systems may require strengthening over time. This could involve exploring ways in which to improve and simplify some these instruments. It would include a drive to look at where instruments and systems can be integrated between departments in order to improve inter-departmental approaches.
- Build capacity: Whilst it is understood that the capacity that the water sector requires will not be in place within the short term, in terms of skills, integrated information and systems, this is an important issue that needs to be driven immediately and continued over time in order to build

adaptive management capacity. This also includes the development of cooperative partnerships across government, the private sector and civil society.

The implications of the IWQM Strategy include:

- Promoting integration of water quality and quantity
- Harmonising key policies and strategies in government departments to support IWQM
- Formalising cooperative governance structures, processes and resources for water quality regulatory actions
- Formalising and institutionalising WQM in key government departments
- Building a WQM cohort in government to support the integrated, inter-departmental approach
- Encouraging joint custodianship of the water resources in government, private sector and civil society to support IWQM
- Formalising of partnerships with both the private sector and civil society to unlock capacity, skills and finances, and bringing the partners on board to co-create solutions for WQM.
- Overhauling all aspects of water quality monitoring, data and information management to strengthen WQM regulation.
- Recognising natural (green) infrastructure as a critical aspect of the integrated management of water quality in urban and rural settings
- Influencing government financing mechanisms as a critical means of enabling water quality action
- Using the SDG indicator process and national reporting mechanisms as an opportunity to address water quality issues.

## Discussion

Mukondi Masithi (DPME) commented:

- The Strategy did not refer to R&D, R&D investment and technology transfer related to water quality. If the Strategy were to emphasise these aspects, it would facilitate DST's calls for proposals and could influence technology transfer through development research. Not only finances but also technical assistance could be an important aspect of partnerships between government departments and with the private sector to address water quality.
- It is important to demonstrate more strongly the impact of water quality through the value chain on social, economic and environmental sustainability. A diagram on the impact of water quality throughout the water value chain would assist in attracting participation from relevant parties. Environmental issues tend to be overlooked. Water tends to be addressed at a late stage in planning, with the focus on water availability rather than water quality.
- The Strategy needs to have a strategic goal related to the monitoring and enforcement system, with indicators to measure whether there is any improvement.

Mr Viljoen responded that the Discussion Document prepared for the workshop is a summary of the Policy and Strategy, and that the fourth pillar of the Policy involves R&D, information management and capacity development. Mr Weston appreciated the recommendations on making the case for water quality more strongly.

Emanuel Marumo (DHET) observed that South Africa's biggest problem with infrastructure was not new build but maintenance, which is directly linked to skills and competencies. Water quality also needs to be maintained. He enquired how the Strategy would ensure the availability of skills to maintain water quality.

Mr Weston responded that building capacity and competence is a key aspect of the strategy, which requires investment in skills and finance.

Mthokozisi Tshuma (DPME) commented that issues of regulation related to waste water management, especially at municipal level, seemed to be missing from the Strategy. Without incentive-based regulation, the Strategy would not achieve its goals. He suggested the possible need for an independent regulator.

Mr Viljoen invited further comments by email.

## **CASE STUDIES: EXTERNAL AUDITS AND THE IMPLICATIONS FOR GOVERNMENT** **(presentation by Lizette van der Walt, Environmental Legal Consultant)**

The presentation was aimed at highlighting opportunities and challenges for WQM in South Africa.

Government has powerful instrument at its disposal in its efforts to improve water quality. The water quality impacts of water users are regulated by stringent measures, including:

- Water use licences for specified water uses (National Water Act, 1998)
- Environmental authorisations for listed high-impact activities (e.g. power stations, new mining developments, new water treatment plants). The focus of these authorisations is on design and location to minimise impact. There are opportunities to design clean and dirty water separation into the authorisation. These authorisations are administered by national and provincial departments of environmental affairs (National Environmental Management Act, 1998)
- Waste management licences for specified activities that impact on water (e.g. waste drop dumps, tailings dams, municipal landfill sites, recycling plants). These licences are administered by the departments of Mineral Resources, and Environmental Affairs (National Environmental Management: Waste Act, 2008)
- Environmental Management Plans and Programmes are blueprints that mining companies must develop before they are granted authorisation. All environmental impacts must be described, together with mitigation plans (previously Mineral & Petroleum Resources Development Act, 2002, now NEMA). The mining industry also requires waste management licences, environmental authorisations and water use licences. The value of Environmental Management Plans is that they can be used to address issues such as sedimentation, erosion and rehabilitation that are not directly linked to a water use or waste management activity. Diffuse sources of pollution such as these often cause more harm than controlled discharge
- Municipal wastewater bylaws, which municipalities use to regulate the quality of industrial wastewater that goes into their sewer plants. Domestic and industrial wastewater is treated through a single system in municipalities. Water quality requirements are prescribed, but in practice most of these activities are not monitored for compliance. Where such activities are monitored, the sites are visited only once a month to take a sample, normally according to scheduled appointments. Many industries hold back their highly concentrated flush effluent from batch systems in a holding tank and discharge concentrated non-compliant chemicals immediately after the sample has been taken. There are enormous opportunities for municipalities to require composite sampling for high-impacting industries, because a monthly sample is not representative.
- Tariffs for non-compliant effluents. The enabling legislation is in place.

Periodic independent external audits and the submission of the external audit reports to the relevant regulator at varying frequencies are compulsory in respect of licences authorisations. Referring to these as 'independent external audits' is a misnomer, because the licence-holder has to pay for the audit. External consultants are generally used to conduct the audits. Because the consultants are hired by the client, they are unlikely to give repeat business, or even to pay, consultants who produce reports demonstrating non-compliance. Many of the environmental consultants who support industry are as guilty with respect to pollution as the industries themselves because they do not render a professional service to their clients.

The minimum requirements for these audits are prescribed by the Environmental Impact Assessment (EIA) regulations promulgated in terms of NEMA (e.g. the audit conclusion must be verifiable; the documentation considered in support of the findings must be disclosed and attached; vague unquantified statements are not permitted). All these licences and authorisations are 'environmental authorisations', as defined by NEMA, and are subject to the auditing requirements of NEMA.

The audit reports are generally of a very poor quality, with problems including, but not limited to:

- Compliance commentary is based on visual observations on the day of the audit.
- Design and other critical commitments made in licence applications are not evaluated (e.g. the design commitments are merely noted).
- Amendment procedures are abused. Licence holders who are issued with a licence with conditions that they do not like often immediately submit a licence amendment application. Auditors who visit the site are informed that there is a pending amendment. It may take years for



the relevant regulator to adjudicate the amendment, and during that period the licence-holder claims not to be bound by the conditions, even though they may disclose their non-compliance.

- Conclusions of 'partial compliance' are made without highlighting the corresponding 'partial non-compliance'. Compliance ratings in most instances are very misleading. Ms van der Walt recommended that in order not to distort the statistics, conclusions of partial compliance should be disallowed in audit reports.

A positive development is that these external audit reports must be published on the publicly accessible website of the licence holder (in terms of NEMA, GN R 982, regulation 34(6)(b).) The sub-standard audit reports are accordingly readily accessible to the public (including NGOs with an active interest in compliance and/or enforcement). There is a risk to government through the disclosure of sub-standard audits.

Opportunities for government to optimise external audit obligations amidst capacity constraints (financial and human) include:

- Consider training of officials in more analytical review of the external audit reports (e.g. typical inaccuracies, omissions, unverifiable, vague, unscientific compliance conclusions, qualifications of the 'specialist' independent auditors etc.)
- Consider including a condition in authorisations enabling the relevant authority to commission an independent re-assessment at the expense of the holder of the authorisation if indicators of misrepresentation are evident from the external audit reports submitted to the regulator. There is likely to be a substantial improvement in the next audit, particularly if company executives are reminded that misrepresentation is a statutory offence that can result in a jail sentence.
- Re-consider the incorporation of the reports underpinning the licence application into the licences through reference alone. The reports (and their often extravagant promises) are not looked at again after the licence is issued, and they may even be altered. Rather extract the specific commitments and include them as express conditions.

Ms van der Walt noted that it was unfortunate that the Department of Mineral Resources was not represented at the workshop.

## **Discussion**

Ms Viljoen commented that all departments with a regulatory function could learn from the case studies presented by Ms van der Walt. The issues of capacity building and training of regulatory compliance monitoring officials and enforcement staff would be taken up in the Strategy and Implementation Plan.

Ms Mochotlhi commented that the presentation demonstrated a number of water quality issues, some of which officials are not aware of, and others that officials feel constrained to deal with. Even where there are officials available to be sent out to regulate, they are not adequately equipped to deal with the strength of industry. The presentation emphasised the importance of capacitating officials with an analytical mind, but DWS is challenged in this regard. The issues extend beyond DWS and are also a challenge to DEA. The NEMA instruments are subject to review, and reviews can be done at the expense of the licence holder. Ms Mochotlhi asked Ms Brisley as well as the team developing the IWQM Strategy to continue working to address the issues highlighted in the presentation. Officials need to respond, rather than being stunned into inactivity by the revelations.

Mr Viljoen observed that three different government departments were responsible for the regulatory instruments related to water quality (DWS, DEA and DMR). It would be unfortunate if one of these departments were to conduct an audit and 'turn a blind eye' when they uncovered findings related to another department's mandate. Departments must be informed as to what they should do in such circumstances.

## **WORKSHOPS**

Participants were divided into the following groups to discuss water quality issues as they pertain to the particular environment: Health; Education; Agriculture; Human Settlements; Science and Technology, Planning, Monitoring and Evaluation; Cooperative Governance and Traditional Affairs; Tourism; and Public Enterprise.

## **Workshop 1: Water quality concerns affecting national departments**

Groups received a worksheet on which they were asked to discuss and populate the following columns:

- Column 1: Articulate concerns of the particular sector with respect to water quality
- Column 2: Record the way in which their sector impacts on, and is impacted by, water quality
- Column 3: Describe issues in more detail.

## **Workshop 2: Departmental interfaces with IWQM Strategic Actions: Sector roles and responsibilities**

The groups would submit:

- Specific interfaces that DWS needs to interact with in their particular environment e.g. programmes, interventions, planning instruments and guidelines
- Relevant positions and contact people in their department.

## **PLANNING THE INTER-DEPARTMENTAL WQM APPROACH**

Mukondi Masithi (DPME) commented on the issue of how government should deal with feedback from a non-governmental institution. Government tends to be defensive rather than approaching NGOs and working together with them to assist in dealing with shortfalls and challenges. This is a missed opportunity. For example, government felt offended by a report published by the Centre for Environmental Rights on water quality related to mining. Government officials need to change the way we think and behave. The onus is on us to reflect and partner with other institutions.

Mr Weston responded that this was a key aspect of an adaptive response.

Ms Magamage Mange (DST) commented that the IWQM Strategy did not seem to provide clear direction to CMAs and municipalities for implementing the strategy.

Aneliswa Cele (DoH) commended the DWS on the WQM initiative. Government departments tend to be protective of their particular mandate and environment, so it is heartening to see DWS reaching out to other government departments to form partnerships to address water quality. The IWQM Strategy notes the impact of water quality on health but is silent on the role of the health sector. The reference documents used in developing the WQM Policy and IWQM Strategy are more internal than externally focused.

## **WAY FORWARD AND CLOSURE**

Ms Mochotlhi thanked government department representatives for heeding the invitation and for their contributions and inputs to the deliberations. She noted that the government department representatives would meet again on the issue water quality and would then be in a position to assess whether the outcomes of the engagement had been applied and whether there were any shortcomings.

DWS would finalise the WQM Policy and IWQM Strategy by mid-March 2017, and the Implementation Plan by June 2017. The government departments would be invited to meet again before the finalisation of the Implementation Plan. Ms Mochotlhi invited delegates to familiarise themselves with the fundamental policy principles, goals, strategic objectives and strategic actions in preparation for the next engagement.

Water Week would take place between 22 and 24 March 2017. The High Level Water Panel would be launched as a Presidential event during that week. Government departments would be invited to attend that event and to participate in Africa Water Week to become better informed about the way in which DWS was managing water quality. DWS intended to engage in broader communication with citizens about the work of the department on water quality.

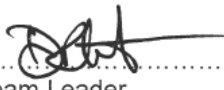
Mr Weston invited further comments on the WQM Policy and IWQM Strategy by 15 March 2017. The tables from the workshop would be circulated and should be further populated in consultation with the relevant actors in the various departments.

The government department representatives present at the workshop would form the basis for establishing a community of practice on water quality, and DWS would continue to engage with them.

Mr Viljoen thanked everyone for attending and closed the workshop at 14:00.

  
.....  
DWS Project Manager  
Pieter Viljoen  
Scientist Manager: Water Quality Planning

Date: 13/03/2017.....

  
.....  
PSP Team Leader  
Derek Weston  
Associate Director: Pegasys

Date: 13/03/2017.....

## APPENDIX 1: LIST OF ACRONYMS

CARA	Conservation of Agricultural Resources Act
COGTA	Department of Cooperative Governance and Traditional Affairs
CSIR	Council for Scientific and Industrial Research
DHET	Department of Higher Education and Training
DHS	Department of Human Settlements
DMR	Department of Mineral Resources
DoH	Department of Health
DPE	Department of Public Enterprises
DPME	Department of Planning, Monitoring and Evaluation
DRDLR	Department of Rural Development and Land Reform
DWS	Department of Water and Sanitation
IWQM	Integrated water quality management
IWQMS	Integrated Water Quality Management Strategy
MEC	Member of the Executive Council
MPRDA	Mineral & Petroleum Resources Development Act
NDoT	National Department of Tourism
NEMA	National Environmental Management Act
NIWS	National Integrated Water System
POP	Persistent organic pollutant
SDG	Sustainable Development Goal
WARMS	Water Registration Management System
WQM	Water quality management
WSA	Water services authority

## APPENDIX 2: COMMENTS FOR THE COMMENTS REGISTER FROM THE IWQMS INTER-DEPARTMENTAL WORKSHOP

Comment	Comment made by
Policy Principle 8 (Broadened funding principles): Government needs to shift from talking about 'funding' to talking about 'financing', which goes beyond funding and could include sponsorship.	Alinah Mthembu (DEA)
The CSIR should be consulted in the development of the IWQM Strategy.	Mahlatse Modiba (DHS)
The IWQMS project should make contact with those officials in the NDoT involved with the Responsible Tourism Guidelines as well as the Oceans Economy initiative	Senzo Nkala (NDoT)
There is a need to further discuss and explore the implications of legislative mandates. If government departments are to play an integrated water quality function, the legislative constraints need to be understood.	Pieter Viljoen (DWS, WQPS)
The Strategy should place more emphasis on R&D, R&D investment and technology transfer related to water quality. If the Strategy were to emphasise these aspects, it would facilitate DST's calls for proposals and could influence technology transfer through development research.	Mukondi Masithi (DPME)
Not only finances but also technical assistance could be an important aspect of partnerships between government departments and with the private sector to address water quality.	Mukondi Masithi (DPME)
A diagram on the impact of water quality throughout the water value chain would assist in attracting participation from relevant parties.	Mukondi Masithi (DPME)
The Strategy needs to have a strategic goal related to the monitoring and enforcement system, with indicators to measure whether there is any improvement.	Mukondi Masithi (DPME)
South Africa's biggest problem with infrastructure was not new build but maintenance, which is directly linked to skills and competencies.	Emanuel Marumo (DHET)
Without incentive-based regulation, the Strategy would not achieve its goals. There is possibly the need for an independent regulator.	Mthokozisi Tshuma (DPME)
There is a risk to government through the disclosure of sub-standard audits.	Lizette van der Walt, Environmental Legal Consultant
Opportunities for government to optimise external audit obligations amidst capacity constraints (financial and human) include: <ul style="list-style-type: none"> <li>Consider training of officials in more analytical review of the external audit reports</li> <li>Consider including a condition in authorisations enabling the relevant authority to commission an independent re-assessment at the expense of the holder of the authorisation if indicators of misrepresentation are evident from the external audit reports submitted to the regulator.</li> <li>Re-consider the incorporation of the reports underpinning the licence application into the licences</li> </ul>	Lizette van der Walt, Environmental Legal Consultant
Departments must be informed as to what they should do if they conduct an audit and uncover findings related to another department's mandate	Pieter Viljoen (DWS, WQPS)
Government needs to deal constructively with feedback from a non-governmental institution. Government tends to be defensive rather than approaching NGOs and working together with them to assist in dealing with shortfalls and challenges. This is a missed opportunity.	Mukondi Masithi (DPME)
The Strategy is silent on the role of the health sector.	Aneliswa Cele (DoH)
The reference documents used in developing the WQM Policy and IWQM Strategy are more internal than externally focused.	Aneliswa Cele (DoH)



## **APPENDIX D-4**

### **NATIONAL SYMPOSIUM**

# PROGRAMME

## INTEGRATED WATER QUALITY MANAGEMENT SYMPOSIUM

### *THEME: TAKING INNOVATION INTO PRACTICE*

**31 May 2017, Centurion, 08h30 to 16h15**

Chairperson: DWS

**Objectives:**

- To create awareness of the IWQM Policy and Strategy;
- To share innovative experiences that can support IWQM; and
- To enable discussions about aspects that require coordination towards strengthening approaches to IWQM.

Item	Time	Topic	Speaker
	<b>08h00 – 08h30</b>	<b>Registration and Morning Tea</b>	
1	08h30 – 08h40	Welcome and Purpose of the Symposium	Chair
2	08h40 – 09h00	Key Note Address	DWS
3	<b>09h00 – 10h00</b>	<b>Integrated Water Quality Management</b> <ul style="list-style-type: none"> <li>▪ Challenges</li> <li>▪ Policy and Strategy</li> <li>▪ Implementation</li> </ul>	P Viljoen, J. Jay, T. Reddy
	<b>10h00 – 10h25</b>	<b>Tea Break</b>	
4	10h25 – 10h30	Introduction to Symposium Sessions	Facilitator: D. Weston
5	<b>10h30 – 11h00</b>	<b>Session 1: IWQM Policy</b> <ul style="list-style-type: none"> <li>▪ DWS Policy Environment</li> <li>▪ International Policy Trends</li> </ul>	M. Brisley (DWS) B. Schreiner (Pegasys)
6	<b>11h00 – 11h30</b>	<b>Session 2: Institutional Support</b> <ul style="list-style-type: none"> <li>▪ Shifts in DWS Institutional Environment</li> <li>▪ Institutional Arrangements for Complex Social Ecological Systems</li> </ul>	E. Bofilatos (DWS) T. Palmer (Rhodes Uni)





# PROGRAMME

Item	Time	Topic	Speaker
7	11h30 – 12h00	<b>Session 3: Finance</b>	
		▪ Innovative Mechanisms	T. Reddy (Pegasys)
		▪ Investment Frameworks	G. Pegram (Pegasys)
8	12h00 – 12h30	<b>Session 4: Partnerships/Stewardships</b>	
		▪ Water Stewardship Alliances	M. Dent (AWS)
		▪ Mine Water Coordinating Body	N. Tandi (SWPN)
9	12h30 – 13h00	Open Floor Discussion	Facilitator: D. Weston
	13h00 – 14h00	Lunch	
	10	14h00 – 14h30	<b>Session 5: Knowledge and Innovation</b>
▪ DWS Knowledge Management Strategy			N. Fundzo (DWS)
▪ Water Quality Research and Innovation Roadmap			N. Kalebaile (WRC)
11	14h30 – 15h00	<b>Session 6: Monitoring and Information</b>	
		▪ DWS 5 Year Strategy (WIM)	M. Mukhawana (DWS)
		▪ Water Quality Monitoring Networks: Making a case for improvement	F. van Wyk (Randwater)
12	15h00 – 15h30	<b>Session 7: Regulation</b>	
		▪ Moving Forward with CM&E	A. Muir (DWS)
		▪ Regulation in Support of Environment	M. Fourie (CER)
13	15h30 – 16h00	Open Floor Discussion	Facilitator: D. Weston
14	16h00 – 16h15	Closing Remarks	Chair
	16h15 – 16h30	Closing Tea	



## water & sanitation

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA

### INTEGRATED WATER QUALITY MANAGEMENT SYMPOSIUM

#### THEME: TAKING INNOVATION INTO PRACTICE

31 May 2017, Protea Hotel, Centurion, 08:30–16:15

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## **WELCOME AND PURPOSE OF THE SYMPOSIUM**

The chairperson, Mr Viljoen opened the meeting and welcomed everyone.

The IWQM Policy and Strategy had been developed through the project, which had reached the Implementation Phase. The Symposium was intended to guide the water sector in the implementation of the IWQM Policy and Strategy. The purpose of meeting was:

- To create awareness of the IWQM Policy and Strategy
- To share innovative experiences that can support IWQM
- To enable discussions about aspects that require coordination towards strengthening approaches to IWQM.

Mr Viljoen emphasised that this was an important project, which both the minister and deputy minister of Water and Sanitation had referred to in their budget speeches.

## **INTEGRATED WATER QUALITY MANAGEMENT**

### **Water quality management challenges and innovation in management – Pieter Viljoen, DWS**

Water of a good quality is fundamental to food and energy security, economic growth (construction, manufacture, tourism etc.), protection of the environment, maintaining human health and wellness, and sustaining livelihoods. Globally, the availability of good-quality water is considered a condition for alleviating poverty. Water pollution has a direct impact on economic growth, human health, ecosystems, job creation and the cost of doing business. The costs associated with poor water quality include: reduction in crop yields, treating affected water, costs to public and private health system from diseases related to polluted water, costs related to clearing of waterways and drainage systems, tourism losses and loss of ecosystem functions.

Water quality management challenges include: vandalism of infrastructure; dysfunctional WWTWs; lack of sufficient maintenance plans; poor budgeting; lack of sufficiently adequate or appropriate urban planning; lack of sufficient formal sanitation in all informal settlements; destruction of ecological infrastructure (wetlands); flow regime changes (less dilution capacity); use of inappropriate land management practices; lack of adequate litter control and prevention measures; lack of sufficient institutional; technical and financial capacity; intricate procurement processes (government is slow to react); ineffective monitoring; uncontrolled discharges from abandoned mines and runoff from discarded mine dumps (legacy issues); inadequate financial provisioning for rehabilitation; insufficient precautionary planning, regulation and enforcement; insufficient compliance with licence conditions; inappropriate licence conditions; inadequate enforcement capacity; land degradation and over-grazing; inappropriate fertilisation practices/over-fertilisation; over-irrigation and in-appropriate irrigation technology; lack of sufficient awareness creation programmes on water pollution; lack of sufficient incentives to treat water or support from government to use alternative technology.

The most predominant constituents of concern in SA are nutrients, salts, microbial contamination, urban runoff and litter. Other issues that have been identified are: acidification, siltation/sedimentation, metals in sediment, persistent organic pollutants (including agro-chemicals), radiation, thermal pollution, nano-particle pollution, compounds of emerging concern (CECs) and EDCs. For many of these, the exact extent at a national scale is unknown. The distribution of issues varies depending on the land-use activities.

Factors that may contribute to the WQM challenges include:

- Lack of necessary alignment and coordination within and between government departments: WQM is hampered by poor coordination and conflicting approaches.
- Lack of necessary finance for WQM: The available financial resources are insufficient and do not recognise the investment required to counteract economic harm.
- Lack of sufficient data and information management: Data sharing is a challenge, including transboundary management. There is a challenge in ensuring that the public has access to information.
- Lack of sufficient capacity and skills.
- Lack of a sector approach and ownership at all levels with respect to self-regulation, awareness and accountability.

It is evident that inadequate management of water quality challenges impacts on the environment, peoples' wellbeing, the growth of the economy and the cost of doing business.

In response to the country's need to take an improved integrated approach to WQM, DWS initiated a project to revise its current WQM policies and develop a national Integrated Water Quality Management (IWQM) Strategy. The project was initiated in October 2015.

The challenges of the project to innovate entail addressing the following:

- To institutionalise water quality management operational and institutional integration
- To ensure that people understand that water quality is every bodies responsibility
- To stop doing the same things over and over again and then expect a different outcome
- To ensure that water quality is on the agenda of other departments and the sector
- To ensure that what needs to be managed get measured.

WQM needs to become institutionalised in the water sector. IWQM is not new but we need to make it common practice. The challenges to the project are to innovate by:

- Institutionalising WQM through operational and institutional integration
- Ensuring that people understand that water quality is everybody's responsibility
- Stopping doing the same things over and over and expecting a different outcome
- Ensuring that water quality is on the agenda of other government departments
- Ensuring that what needs to be managed gets measured.

The vision for water quality management in South Africa is captured in the concise statement 'Fit for use, for all, forever':

- Fit for use: A scientific judgement, involving objective evaluation of available evidence, of how suitable the quality of water is for its intended use or for protecting the health of aquatic ecosystems.
- For all: This indicates a fundamental commitment to equitable utilisation. It is accepted that water resources will be utilised in ways which will benefit all the people of South Africa.
- Forever: This acknowledges the commitment to sustainable management: the willingness to balance the needs for long term access to the water resource, against the needs for short term development and utilisation.

The IWQM Policy uses the hierarchy of decision-taking, which proceeds as follows:

- Pollution prevention
- Waste minimisation
- Precautionary principle
- Differentiation principle
- Reclassification: the determination of a stricter or more lenient resource management class is not currently allowed by the National Water Act.

WQM needs to be integrated at various levels, from the national to the water management area to the catchment by addressing the negative impacts of particular land uses. The external factors that have to be integrated include: political, departments, sectors, socio-economic, technological, legislative and environmental. The impacting factors that have to be integrated include: physical, hydrology, geology, soil properties, flow regime, geohydrology, land use, pollution sources, point sources and diffuse sources.

The Integrated Manual of Resource Directed Measures for Protection of Water Resources was published in 1999 but is not well known or commonly applied in DWS. The process for resource directed management of water quality

The framework for integration was developed in the context of determining the Reserve, and the water quality planning environment responded with a Deming cycle of management approach involving: plan, do, check and act. In 2006, the Resource Directed Management of Water Quality process was developed which entails starting with an assessment of the catchment, development of the catchment vision, Reserve determination, determination of RQOs, development of a catchment management strategy, water quality allocation, instituting source directed controls, and monitoring and auditing. Classification of the water resources came later.

## IWQM Policy and Strategy – Traci Reddy, Pegasys

The aim of the IWQM Policy is to:

- Elevate water quality and water quality management on the country's agenda.
- Formalise and institutionalise a common approach to water quality management in South Africa.
- Support a consistent inter-departmental approach to how water quality is managed in the country.
- Support cooperative and integrated approaches to water quality management across sectors.
- Address operational aspects such as taking an integrated approach, broadening finance mechanisms and improving knowledge and information in the execution of the water quality management function.
- Provide a framework to realise improvements in water quality in key systems.
- Guide the development of an IWQM Strategy and resulting Implementation Plan.

The core concept of the IWQM Policy and Strategy is that water quality is a developmental issue that affects the economy and the well-being of society. Although DWS is the Sector Leader in WQM, everyone has a role to play and a joint approach between government departments, the private sector (through initiatives like the SWPN) and civil society forms the basis of tackling the water quality challenges facing the country.

There has been engagement with targeted stakeholders throughout the project (as opposed to public consultation), including:

- Project governance structures: Project Administration Committee, Project Management Committee (relevant directors and deputy directors) and Project Steering Committee (relevant chief directors)
- Other government departments (e.g. National Treasury, Agriculture)
- Private sector (e.g. Eskom, Sasol, AgriSA)
- Civil society (e.g. Rhodes University, Centre for Environmental Rights, FSE)
- Targeted provincial stakeholders
- Targeted national inter-departmental stakeholders
- Reviewers: Dr Peter Ashton and Dirk Versfeld

The IWQM Policy provides the overall vision for WQM in SA. It strengthens existing policy but also proposes a few new positions. The Strategy describes the prioritised strategic actions that need to take place over the short, medium and long term in order to realise the WQM vision set by the Policy. It is aligned with broader water and development strategies (e.g. NDP, NWRS-2, GWS, SDGs). The Implementation Plan describes roles, responsibilities, timeframes and resource requirements to achieve the priority strategic actions. The roll out of the Implementation Plan includes monitoring and reporting on implementation performance and the effect of the implementation of the Policy and Strategy on the water resources.

The vision for the Policy establishes the aspirational intent, supported by goals that set out the pragmatic intent, principles on which the framework is built, and the policy themes as pillars. This framework is underpinned by a set of values as to how DWS will give effect to the Policy.

The value system on which the IWQM Policy is based comprises:

- **Having a value system** that embraces justice, ethics, equity, integrity and fairness: Coherent action without a value system is at risk of floundering in the face of demands from competing sectors and the challenge of corruption. The Bill of Rights and the Constitution provide clear value-based principles for action in implementing the IWQM Policy.
- **Courage:** The courage to act decisively, to make mistakes and to learn, within a cycle of monitoring and review that is governed by a strategic adaptive management approach.
- **Communication with team work:** Recognition of an interconnected water system of which water quality is a part supports the needs for transparent communication and the ability to work as a team across all sectors of government and with the private sector and civil society.
- **Competence:** There are many aspects to IWQM, including technical aspects and the need to manage complex systems that require high levels of technical competence. The appointment of competent staff must be supported by capacity building programmes.

- **Empowerment:** Officials are empowered to act (that is, to use their courage and competence) where there is effective leadership.
- **Informed civilians:** Informed civilians are a key element of the effective delivery of IWQM. The emergence of an informed civilian population requires investment in effective public information processes.
- **Responsibility and accountability:** Responsible action emerges when there is competence, trust and an active shared value system. Accountability arises from the willingness and transparency to take ownership of those actions.
- **Listening and learning:** Responsive implementation of the Policy will require water quality managers to listen to water resource users and protectors, both individually and institutionally, to be open to new learning, and to be able to change approaches in the spirit of adaptive management.

The IWQM principles had been expanded from the original 15 in the WQM Policy to include principles to support participation from civil society (namely principles 2 and 15). Several of the policy principles were new in respect of their application to WQM, namely those that are underlined in the following list:

Principle 1: Government-wide integrated water quality management

Principle 2: People-centric

Principle 3: Subsidiarity and accountability

Principle 4: Transboundary water quality management

Principle 5: Partnerships

Principle 6: Administrative fairness and implementability

Principle 7: Adopt administrative penalties

Principle 8: An integrated and adaptive approach

Principle 9: Hierarchies for pollution management

Principle 10: Promotion of green/ecological infrastructure restoration and rehabilitation

Principle 11: Risk-based approach

Principle 12: Water quality is a developmental issue

Principle 13: Broadened funding mechanisms

Principle 14: Polluter pays

Principle 15: Informed public

Principle 16: Data is a strategic asset

Principle 17: Publicly available information.

The WQM Policy has several implications that will require legislative amendment:

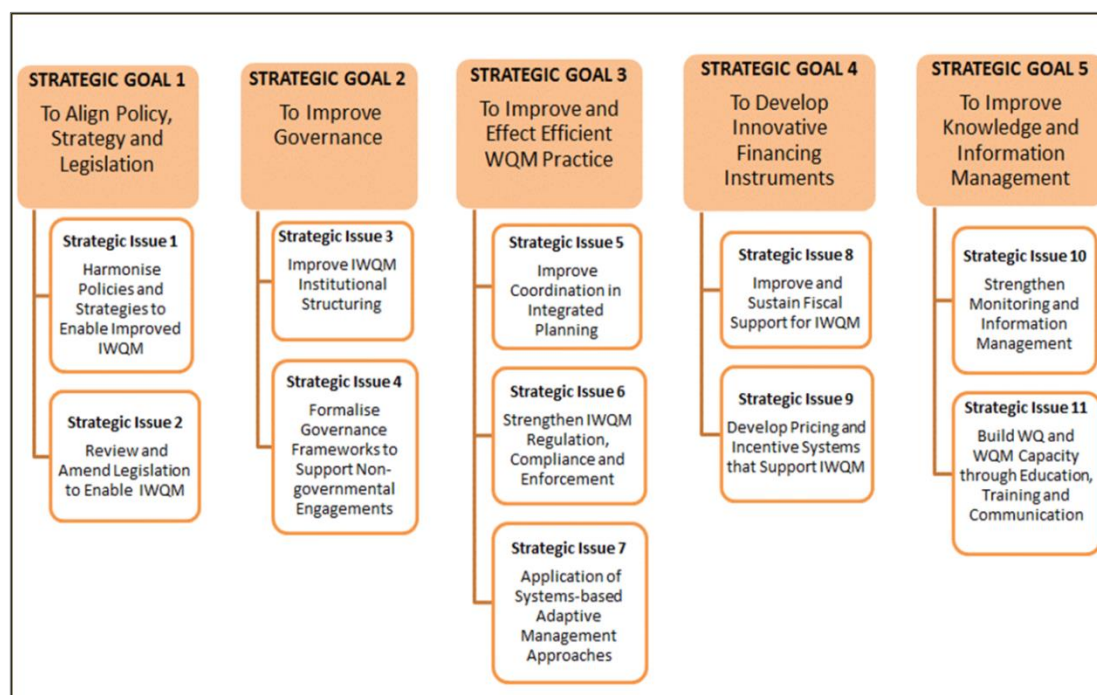
- Amendment to allow reclassification of the management class
- Amendment to allow for the declaration of protected water source areas
- Amendment to allow for the categorisation of polluting industries, based on risk
- Amendment to extend the financial provisioning clause to all high-risk polluting sectors
- Amendment to allow for the promulgation of a Money Bill for the Waste Discharge Levy
- Amendment to allow for a pollution register
- Amendment to allow for administrative penalties.

The IWQM Policy and Strategy have been structured around a fundamental shift in approach that enables sector-wide engagement through more active partnerships with government departments and institutions, as well as the private sector and civil society. The four policy pillars support the strategic goals of the Policy and Strategy:

<b>Policy pillars</b>	<b>Strategic goals</b>
Taking an inclusive approach to IWQM	Goal 1: Improved alignment of Policy, Strategy and legislation
	Goal 2: Improved governance
Applying integrated, adaptive water quality regulation and management	Goal 3: Improved, efficient and effective WQM
Financing integrated water quality management	Goal 4: Innovative finance
Building an appropriate knowledge and information management base	Goal 5: Improved knowledge and information management

During the Assessment and Policy phases of the project, a large number of issues were identified. These were collated into groups resulting in 11 strategic issues. The issues are aligned to each of the goals of the IWQM Strategy.

Each WQM goal is supported by strategic issues that have been broken up into strategic objectives (Figure 1) and the strategic actions to support the objectives. These objectives and actions were formulated from the assessment phase, which used insights from the Literature Survey, SWOT and Root Cause Analyses, and a number of targeted stakeholder engagements, with both internal and external DWS members.



**Figure 1: WQM strategic goals and strategic issues**

There are five goals, 11 strategic issues, 21 objectives and 60 strategic actions. Prioritisation was based on the following considerations:

- What are the biggest problems that we need to fix?
- What are the foundational activities that will improve our ability to deliver in future?
- What will result in the biggest impact and how do we allocate resources to achieve that impact?
- What can we realistically, yet with ambition, achieve in the short term, given financial and human resource constraints
- What are the preferred ways to meet the objectives?
- Who are the key players and what are their roles?

### **Towards implementation – Derek Weston, Pegasys**

Despite innovative Policy and legislation in the past, water quality continues to deteriorate.

The core considerations for the formulation of the Implementation Plan include:

- Focusing on short to medium term timeframes, while building a platform for future strategies in line with the policy and visions for water quality management
- Prioritising critical concerns, while ensuring that other issues are addressed through on-going management or monitoring for future prioritisation and action
- Relevance at national, catchment and local scales, while ensuring horizontal alignment across sectors and institutions at each scale
- Providing the framework for actions towards a strategic intent across short, medium and longer term time frames
- Enabling an adaptive response to changing circumstances and achievements based on effective on-going monitoring and evaluation.



The Policy and Strategy ask for a more sectoral approach to WQM that goes beyond WQM and sanitation. The National Development Plan provides the overarching national objectives. The Medium Term Strategic Framework establishes the priorities for an electoral term through five-year government plans. Further prioritisation is done through sectoral and departmental plans that find expression in annual performance plans.

Key priorities include:

- Water quality function: The identification of a cohort of champions within Government, and primarily DWS, to lead the water quality management function is priority. This will be supported by a drive to communicate the IWQM Strategy to the broader sector.
- Information management: Good, sound, current and scientifically defensible data to support the implementation of the actions and track progress. Data systems need to be integrated and updated, to ensure that a baseline for water quality can be established, for reporting and tracking purposes. This will require on-going development by both Government and the Sector.
- Mobilising the sector: Establishing the community of practice across the sector is a significant priority in initiating and maintaining sector wide engagement. This will require the identification of a champion (or a cohort of champions) that function within government to lead the WQM function (and to be recognised as such).

Provincial roadshows were asked to prioritise strategic issues, and did so in the following order (from among the 12 strategic issues):

- 1: Harmonise policies and strategies to enable improved IWQM
- 3: Improved WQM institutional structuring
- 4: Formalise governance frameworks to support non-governmental engagements
- 6: Strengthen IWQM regulation, compliance and enforcement
- 8: Fiscal support for IWQM
- 9: Develop pricing and incentive systems that support IWQM
- 10: Strengthen monitoring and information management
- 11: Build water quality and WQM capacity through education, training and communication

The structuring actions of the Implementation Plan will include:

- On-going initiatives
  - Policy harmonisation (DWS and international governmental)
  - Internal structuring and institutionalisation
  - Causality actions
  - R&D and innovation that influence strategy and practice
  - Capacity retention
- Systemic and enabling actions
  - Identification of national champion
  - Communications and awareness
  - Planning, authorisations, monitoring and information, WDCS, CME (systems, partnerships)
  - Capacity building
- Catchment level actions
  - Fixing catchments (prioritised)
  - IWQM planning
  - Partnerships and community of practice
  - Planning, Authorisations, Monitoring and information, WDCS, CME (operational)
  - Capacity building

Edition 1 of the Implementation Plan aims to get agreement on structures and approach. Edition 2 will then be a co-created, populated and a plan will be developed through engagement, with attention to how to make the Plan more pragmatic; show the link between monitoring and evaluation, implementation and organisational design; outline a high-level phasing; send out tables to key stakeholders for inputs, follow up meetings where required. The priority focus will be internal to DWS; a series of focus group discussions would be convened to co-create and populate the plan; and additional input might be required per focal area in order to get full agreement.

## **Discussion**

Rivashi Panday (DWS) asked how incentives would be created to implement the key theme of partnerships and getting government and the private sector to work together. Business should not become involved simply from the perspective of annual expenditure on their CSI budget, as that would be a very short-term approach. Partnering with government on IWQM would have to form part of the core strategy of business.

Mr Weston responded that as stewardships and partnerships developed, they would begin to look at how to incentivise engagement between the private and public sectors.

Morakane Madiba (Rhodes University) commented that the issue of IWQM is a mainstream concept for both science and society. The emphasis seemed on the scientific rather than the social aspects. The IWQM Policy seemed to be aimed at the institutional level, but not all communities are institutionally organised. She asked how the Policy would speak to communities.

## **SESSION 1: IWQM POLICY**

### **DWS Policy Environment – Marie Brisley, DWS**

Following South Africa's transition to a full democracy in 1994, the new government embarked on an ambitious programme to eradicate backlogs in water supply and sanitation, underpinned by the development of sound sector policies and legislation, which included the White Paper on Water Supply and Sanitation (1994), White Paper on National Water Policy for South Africa (1997), White Paper on Basic Household Sanitation (2001), Strategic Framework for Water Services (2003), National Water Policy Positions for Redress, Equity and Sustainability (2013), Water Services Act (No. 108 of 1997) and National Water Act (No. 36 of 1998). President Zuma reported in 2014 that progress had been made in ensuring equitable access to water.

A 20-year review of water allocation was conducted. Water allocation reform has taken place to ensure equitable access, including the development of new water and sanitation legislation. The past 20 years have seen a dramatic and sustained process of institution-building and restructuring, legislation and policy development, and domestic and international engagement. The Review noted a number of new waste water treatment schemes being completed and existing ones refurbished, in recent years. Strategies (NWRS1 and 2) have been developed to guide future water resource planning, management and investment requirements, based on an assessment of the country's water balance against projected future needs. Government has developed standards for basic water supply and sanitation that aim to reduce human health issues and environmental degradation. These standards have been implemented to varying degrees.

The Review report made several cautionary statements:

- Improving the capacity, maintenance and operation of waste water treatment systems must be a priority of government.
- Deteriorating quality and security of supply of water undermines the ability of government to effectively address inequality and grow the economy.
- Challenges remain around ensuring equitable access to water and maintaining water quality.

DWS has a number of new policy developments that would support the IWQM, including policies related to: Sanitation, Climate Change, Water Stewardship, Mine Water Management, Hydropower, Wetlands, and Rural Livelihoods.

### Sanitation Policy

The policy deals with all sanitation issues across the entire sanitation value chain – namely – the collection, removal, disposal or treatment of human excreta and domestic wastewater, and the collection, treatment and disposal of industrial wastewater. Sanitation services in South Africa contribute significantly to public health. The vision is that sanitation services should be hygienic, equitable, sustainable and efficient for all people.

Status: The policy has been approved by Cabinet and is currently being rolled out while finalising the implementation plan.

### Water Sector Climate Change Policy

The objectives of the policy are:

- To highlight and strengthen the linkages between the National Climate Change Response White Paper and water and sanitation sector responses.
- To strengthen the development, implementation and enforcement of regulations that have implications for climate change.
- To provide a framework for the implementation of the Climate Change Response Strategy for the water and sanitation sector.
- To highlight the policy principles of the water and sanitation sector with regards to climate change.

Status: The policy is on its way to the Minister for approval.

### Stewardship Policy

The purpose of the policy is:

- To define the policy framework conducive to fostering water stewardship partnerships, their respective implementation and management at the local, catchment and national level, aimed at collective responsibility towards the management and use of the nation's water resources.
- To advance the strategic imperatives as outlined in the NWRS2 to support the National Development Plan and Medium Term Strategic Framework.
- To make the water partners realise that internal efforts cannot address the problem of water risks alone, but that working beyond the factory fence can provide for effective water resource planning, management and use, and create accountability for water resource protection and associated actions.
- To provide the policy framework and guidance to national, catchment and local water management institutions and water services institutions on their roles and responsibilities on the establishment and management of collective and collaborative actions in the water and sanitation sector.

Status: The policy is ready for external consultation. The policy is expected to be finalised by the end of the financial year.

### Mine Water Management Policy

The purpose of the policy is to provide the position of the DWS on mine water management, including AMD and measures on protection of water resources from prospective, operational and historical mine activities that have negative quality impacts.

Mine water management continues to be a major threat to water resources. Mine water includes acid rock drainage (ARD), acid mine drainage (AMD), neutral mine drainage (NMD) and saline drainage (SD).

Status: The policy has been approved by Cabinet for gazetting for public consultation. The policy will be gazetted in the second quarter together with the IWQM Policy.

### Hydropower Policy and Principles

The purpose is to provide the policy position for DWS on the establishment and development of hydropower on DWS owned infrastructure, which include dams, barrages, weirs, irrigation systems (canals and conduits) as well as run-off river schemes as part of the long term interventions by the Department to support and contribute towards sustainable power supply in South Africa.

Status: The Policy is on its way to Cabinet for approval via different Clusters. Approval is anticipated before the end of the financial year.

### Wetland Policy

The policy is based on the following principles:

Principle 1: Wetland hierarchy of decision making; no net loss in wetland functions and values

Principle 2: No-go areas

Principle 3: Catchment scale wetland management

Principle 4: Sustainable wetland subsistence use

Principle 5: Differentiated wetland management

Principle 6: Co-operative wetland management  
Principle 7: Wetland management partnerships  
Principle 8: Prioritisation of wetlands  
Principle 9: Technical wetland efficiency  
Principle 10: Informed decision making and sound wetland science  
Principle 11: Wetland awareness  
Principle 12: Effective wetland monitoring

Status: Finalisation of the policy is expected before the end of the 2017/18 financial year.

#### Water for Development: Sustainable Livelihood Policy

The aim is to conduct the implementation evaluation of the Financial Assistance to Resource Poor Irrigation Farmers (FARPIF) Policy and to carry out a feasibility study on extending the scope of the policy to other income generation livelihood initiatives.

Status: The policy is undergoing an appraisal process with the Department of Monitoring and Evaluation. The project will commence towards the end of the 2017/18 financial year as part of the response to the DAFF/DRDLR Operation Phakisa 2016.

#### Regulation/ Policy on Unconventional Gas (including fracking)

The policy statement on unconventional gas (including fracking) will be articulated in the finalised IWQM policy in line with current Draft Regulation on unconventional gas (including fracking).

Status: The policy statement will be articulated in the IWQM in line with the current draft regulations, which are scheduled to be gazetted in the second quarter.

#### Way forward

DWS recognises the amount of work that still needs to be done in aligning its policy environment, not only internally, but across government and is working towards achieving this. National government must work in parallel with local government to identify community needs and ensure that they are reflected in policy and legislation. A bottom up approach of regular consultations with stakeholders is in place to ensure responsive policies and legislation.

#### **Water quality policy trends – Barbara Schreiner, Pegasys Institute**

A number of aspects influence water quality policy in an iterative process of development over time, including: regulatory capacity, social attitudes, economic status and drivers, scientific knowledge, and the nature and intensity of pollutants. SA has a strong sequential approach of developing policy, enacting legislation and conducting implementation, which differs from many other countries. Some countries do legislation and implementation together and develop policy later. Some countries do not develop policy at all but go straight into formulating a plan. Water quality policy does not necessarily exist in other countries in the way in which we would have it. Many countries have an overarching water resource management policy but not at the level of detail as in SA of an IWQM policy or the specific kinds of policies that Ms Brisley presented. The specificities are dealt with through implementation plans instead. The picture varies enormously around the world.

When looking very broadly at how WQM policy has evolved, a long time ago most pollution was in the form of food waste and human waste that were biodegradable. When pollution became too bad, early civilisations tended to bring in fresh water supplies from elsewhere, or otherwise move if there was somewhere suitable to move to.

Very real water pollution problems arose in 19<sup>th</sup> century industrialised countries. In 1858, the Thames River, for example, was described as: 'A stench so foul had never before ascended to pollute this lower air.' This was the beginning of attempts to quantify and regulate WQM.

In 20<sup>th</sup> century, there was a major drive related to industrial productivity. The need to manage the impacts of industrialisation was recognised, with a focus on end-of-pipe technology-driven approaches to WQM.

By the last 20<sup>th</sup> and early 21<sup>st</sup> century there was increasing recognition of the need to manage the impacts of industrialisation and other development activities. Pollution control was introduced, with stakeholder involvement, thus no longer taking an exclusively technicist approach. The value of ecosystems and the environment was increasingly recognised, with a receiving water quality approach. This era is characterised by management at ecosystem level, concern for river health and attention to the notion of citizen science (namely that ordinary people are not just to be consulted, but could become active players in the scientific management of water quality). This latter approach is what the IWQM Policy and Strategy is interested in.

Policy is very context specific. South Africa needs to recognise that it is a developing country, and as such is not located in one of the highly developed regions of the world, with vast numbers of engineers and scientists, high GDP and enormous resources to tackle the issues. This poses challenges in terms of what we are able to do. It would thus not necessarily be useful to use the EU Water Framework Directive as our loadstar for South Africa. Poorer countries that manage to meet the standards of the EU Water Framework Directive are able to do so only because they receive vast amounts of money from developed countries in the EU. SA is not in that situation.

The study therefore looked at a range of other countries, some of which are developmentally more similar to SA.

Brazil classifies its water bodies into different classes of use. This is the basis for integrating the quantity and quality aspects of water management. There are standards for effluent discharge for each water class (13 categories). The classification is a planning device balancing quality standards with the costs of waste treatment, either to keep the standards or to restore the quality of degraded rivers and lakes. San Paulo has introduced regulations limiting the industrial use of potable water, forcing industry to use recycled water/treated effluent.

In 2015 China launched a comprehensive water pollution plan. The plan sets targets for 5, 15 and 35 years. By 2020, 70% of water in 7 major watersheds are to meet an acceptable standard (75% in 2030). The plan has 35 policy statements in 10 programmatic areas:

- Pollutant discharge control
- Economic restructuring
- Conservation and protection of water resources
- Scientific and technological support
- Market mechanisms
- Environmental regulation and enforcement
- Environmental management
- Protection of the aquatic ecological environment
- Differentiated responsibilities
- Public participation and social supervision.

Denmark uses a system of regional (sub-national) planning to manage water quality. The focus of the regional plans has shifted as pollution has shifted over the years. The regional planning focuses on the specific needs of an individual water body through an open and transparent process. However, agricultural pollution fell outside the remit of this regional water quality planning until the introduction of the EU Water Framework Directive. Research institutes are used to evaluate different pollution management options. Strict requirements forced Danish industries and farmers to develop new techniques and less-polluting production methods. Industry is governed by the best available technology principle. Land use and agricultural practice regulations control agricultural pollution.

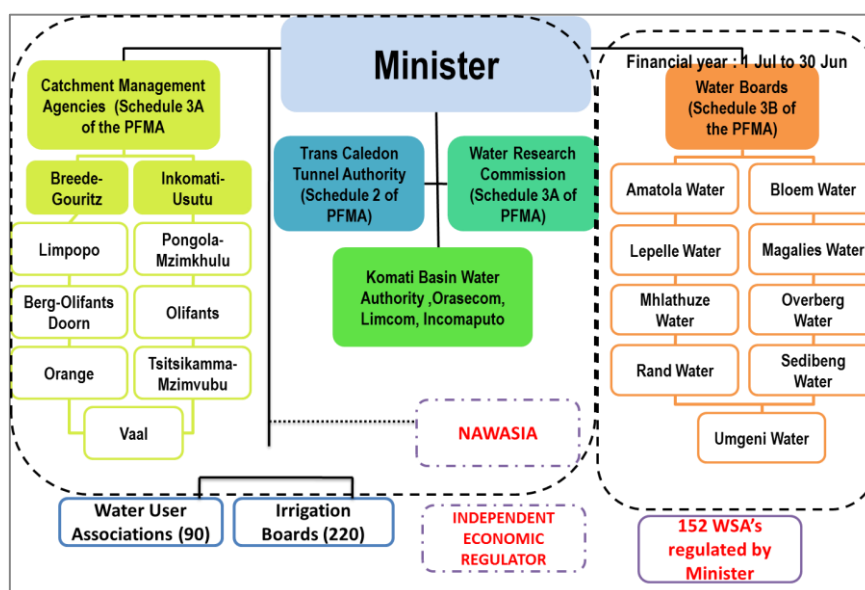
On a global level, the discussion of water quality is framed by the UN Sustainable Development Goals. Under the Millennium Development Goals, the focus was very much on water delivery and sanitation. The SDGs are much broader. Goal 6 (Clean water and sanitation) states that by 2030, water quality must be improved by reducing water pollution, eliminating dumping and minimising the release of hazardous chemicals and materials, halving the proportion of untreated waste water and substantially increasing recycling and safe reuse globally. SA will be obliged to report against the framing of water quality as expressed in the SDGs. Water quality does not reside only in SDG 6 but is relevant to many of the others. It will not be possible to achieve goals such as SDG 3 (Good health and well-being), 14 (Life below water) or 15 (Life on land) and several others unless water quality is addressed and improved.

## SESSION 2: INSTITUTIONAL SUPPORT

### Shifts in DWS institutional environment – Eustathia Bofilatos, DWS

DWS has done institutional reform and realignment several times since the promulgation of the National Water Act (NWA) in order to align the department with national initiatives. The National Development Plan (NDP) supports the establishment of regional water utilities (for bulk infrastructure, CMAs (for managing catchments in a water management area) and a National Water Resource Agency (to manage water-related infrastructure). In 2013, 13 policies were gazetted in order to fast-track transformation. One of these policies concerned the disestablishment of water user associations or irrigation boards. The functions that they were performing were to be aligned to the catchment management strategies of each CMA and assigned to a new institution that would report to the CMA. All these initiatives must be aligned with the Presidency's review of state-owned entities. One of the biggest concerns in the public sector is proliferation of entities, which are often able to circumvent government processes. However, government could not achieve service delivery without these entities. SA needs to create partnerships, secure the expansion of economic and social growth, ensure the sharing of resources, develop skills and build capacity such that everyone forms part of the developmental state.

There has been change in the institutional landscape for water resource management. In 2013, nine water management areas were established, each of which would be managed by a CMA. One of the intentions in establishing the CMAs was to address weak service delivery related to water supply and sanitation services, especially poor water quality, the slow pace of decentralising water resources (i.e. slow pace of delegation of functions to local water management institutions), the limited transformation of water allocation, weak governance of local water management institutions that were not supporting service delivery, and duplications and gaps between the mandate of regional bulk water institutions and water services institutions.



**Figure 2: Current water sector institutional landscape**

Figure 2 shows the current institutional landscape. CMAs have already been established and are functioning in the Inkomati-Usuthu and Breede-Gouritz. Proto-CMAs have been ring-fenced for all other WMAs, namely: Limpopo, Pongola-Mzimkhulu, Berg-Olifants Doorn, Olifants, Tsitsikamma-Mzimvubu, Orange and Vaal. Water boards are being transformed into regional water utilities. The National Water Infrastructure Agency is being established, starting with due diligence to determine the form that it will take.

The primary motivation for CMAs as separate entities from DWS is as follows:

- Allows DWS to devolve operational functions to facilitate a clear separation from its policy and regulatory roles, which was a key recommendation of the Presidential Review Committee on state-owned entities
- Creates institutions that focus solely on water resources management (as opposed to also dealing with water services) and provides vehicle to consolidate (de-fragment) water resources management within the respective CMAs
- Allows for water to be managed at a local level, and is more responsive to water user needs and speedy decision making around water resources management
- Provides a more effective platform for stakeholder engagement and partnerships
- Facilitates greater transparency on decisions (as well as utilisation of water use charges) and performance around water resources management
- Creates accountability at a local level for water resources management
- Provides an opportunity to create a more customer-focused culture for water resources management, since it is difficult to correct the course in the current institutional model
- Aligns with international best practice for water resource management.

CMAs were conceptualised in the 1996 White Paper and are established in terms of chapter 7 of the NWA. CMAs are statutory bodies established in terms of section 78(1) of the NWA. They are also listed as schedule 3a entities (service-delivery public entities) under the PFMA. CMAs are responsible for protecting, developing, managing and controlling water resources in a sustainable and equitable manner to meet the country's socio-economic objectives. The NWRS provides for 9 viable CMAs to be established by 2016.

The current sector operating model, is as a result of evolution, rather than functional design and it has been characterised by a start-stop reform process. The institutional uncertainty is negatively affecting sector performance because institutional capacity cannot be established and sustained. Fourteen studies have been undertaken on water services and water resources institutional reform. Seven of these assessed the institutional arrangements of CMAs and appropriate institutional model for managing water resources. All these studies recommended that CMAs be established as Schedule 3a Public Entities, with the last two studies confirming that nine such public entities be established.

One of the most critical functions of a CMA is to develop the catchment management strategy, which should be designed to ensure the improvement of water quality and the allocation of water to all the various water users, while promoting equity and transparency.

As from 1 April 2015, proto-CMAs were ring-fenced to operate as ring-fenced structures during an incubation period of 12 months to fast-track the establishment process. Proto-CMAs are transitional structures (in an incubator model) within the regions to ringfence the water resource management functions, and associated staff are to be transferred to the CMA. The purpose was to consolidate the functions and budget for nine proto-CMAs in order to have operational, legal and financial effectiveness in performing functions, determining the yields and setting the tariffs in accordance to the Pricing Strategy. Responsibility and accountability are to be clarified, especially in areas where one CMA crosses three DWS Provincial offices. It should be ensured that the establishment process is implemented smoothly and transfer is done smoothly once the CMAs are established. All the CMAs have been gazetted for establishment apart from the Berg-Olifants Doorn and the Orange. For the other proto-CMAs, all that remains to make them fully functional is to establish boards.

The functions that will be retained by DWS in the long term are:

- Development, revision and amendment of policy and legislation
- Developing and ensuring the implementation of the National Water Resource Strategy, including the raw water pricing strategy
- National water resources planning and reconciliation of supply and demand
- Development, operation and maintenance of national monitoring and information systems
- Determination of classification, reserves and resource quality objectives for water resources of national significance or with significant inter-water management area implications and ensuring that CMAs implement
- Regulation and oversight of CMAs, regional water utilities, TCTA and Water Sanitation Infrastructure Agency (NAWASIA)
- Flood monitoring and management in national systems

- Authorisation of strategic water use, national infrastructure development and operation, and determination of inter-basin transfers
- Ensuring water use authorisations are in line with national policy, procedures and guidelines, including policies on redress and equity
- Negotiating and overseeing agreements in transboundary basins

There could be delegations from DWS to CMAs in some instances, for example for licensing, in which case the CMA would become the responsible authority.

DWS has realised the need to revisit its core mandate and clearly establish the respective roles and responsibilities of DWS and the CMAs. In March 2017, the director-general therefore established a task team to deliberate in a strategic conversation and make recommendations on the following:

- Ultimate end state of Regions in line with the policy direction to establish CMAs
- Clearly define roles and responsibilities between CMAs, Regional Offices, National Water and Sanitation Agency, Regional Water Utilities and Water User Associations/Irrigation Boards
- Confirm the core functions and mandate of the department in light of the establishment of the new institutions
- Consider and recommend an approach to engage with labour unions on the proposed institutional arrangements
- Make and present recommendations to the department's strategic planning session.

The intention is to address the following challenges through the establishment of appropriate institutions:

- Incomplete separation of DWS roles (policy, regulation and operation)
- Lack of decentralisation (water resource functions and revenue)
- Uncertainty on establishment of institutions
- Fragmentation of functions
- Negotiations with labour ongoing for too long
- Leadership and accountability
- Inadequate skills and capacity
- Inadequate funding
- Poor relations between regions and proto-CMAs
- Limited oversight capacity to oversee approximately 200 entities.

### **Institutional arrangements for complex social ecological systems: catchments and WMAs – Prof Tally Palmer, Institute for Water Research, Rhodes University**

Prof Palmer posed the question of why an ecologist such as herself would be speaking in the Institutional Support session and responded that the answer was transformation. We are all on the journey of using what we know to do things differently. It is very easy to become discouraged. Prof Palmer observed that the path of progressing towards one's goals sometimes goes backwards or downwards. Implementing policy, strategy and legislation is difficult because there are so many interacting parts, processes are non-linear, there may be a decision to deviate after feedback.

Catchments are complex social-ecological systems in that they are integrated and holistic. The planet is made up of physical and biological parts, and humans are a component of the biological part of the planet. We need to acknowledge our connectedness and the fact that we are the first of the species to be able to transform the content of all the other biota on the planet. We do not always organise our thinking to understand the implications, or to behave in ways that respond to this complexity.

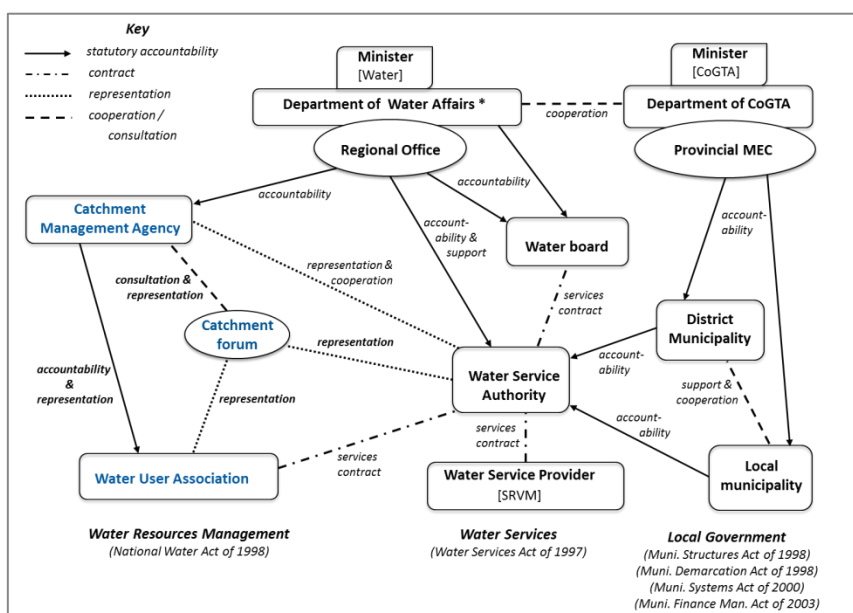
In a world in which reading policy and strategy documents will seem like reading the story of an impossible dream, it is important to realise what each and every person actually understands. Every person understands that they are a person; that they are connected to other people; and they live in a part of the Earth where there is water. If there was no water, they would not be alive. This fundamental understanding of humanity and the connectedness to water is something from which we can all work. The deep connectedness runs through all our policies.

Almost 20 years after the promulgation of the National Water Act, why do we find it difficult to move into narratives of hope and stories of where things are working. It is objectively hard to go forward



when there are so many things to consider, and the things that connect them are not straightforward, and where one action may feedback to another in a way that you do not expect. We cannot go forward in a linear line, and we have not yet learned to be comfortable with the fact that we have to wiggle along. We are optimistic because water is a fundamental connector. While we have good principle of things being fair to people now and into the future, and being as efficient as possible with a limited resource, but we are not good at acknowledging that not everybody can have everything they want all the time, in the same place. We do not emphasise engagement, negotiation, the discussion of shared values, pathways to implementing those value, in ways that explicitly allow us to resolve things. We realise that we have to solve problems, but when we encounter so-called 'wicked problems', where there are so many interactions that as you try one solution, you 'tie another knot', we generally cannot talk of solving problems, but have to think in terms of 'resolving' or 'transitioning' or 'going forward in a direction'. If we set ourselves up to solve everything, we are probably setting ourselves up to fail, but if we say that we will move steadily towards negotiating the fair sharing of the resource between different kinds of people who need it, so that future generations can still use it, it will be a little bit easier and we will have a 'doable' goal. If we internalise that the catchment we want to manage are a combination of people and the biophysical, then we start to have the kind of conceptual basis for policy and strategy.

Effective implementation requires good governance by appropriate institutions. Governance is one of the pillars for implementing policy and strategy. In order to do anything we need good governance, but appropriate institutions. As an ecologist, Prof Palmer used to believe that good science and understanding of ecosystems would ensure that they were safe, but she had watched ecosystems deteriorating throughout her whole career under the pressure of human use. The ability to protect ecosystems, so as to protect our future, is difficult. She had realised that people make decisions (the biophysical world does not make decisions), and that we make decisions in institutions by gathering our power in institutions. The extent to which our institutions work well depends entirely on how well they are governed, and fundamentally on the values out of which they are governed. In the concept of 'good governance', 'good' is a value word that can mean a range of things, including efficient, or serving the government. If we take good government to be ethical government in the service of as many people as possible (in particular the vulnerable people in our society) and the protection of future generations, then we the basis for good governance.



**Figure 3: Water management landscape**

Because of the devolution of power, local government has authority for service delivery, and CMAs and water user associations are responsible for resource management. The relationships between them include service level agreements and authorisations. Figure 3 provides a picture of who needs to talk to whom in order to move forward.

The governance challenges are very different in the Inkomati-Usuthu with four large sub-catchments in its water management area, from the Tsitsikamma-Mzimvubu with multiple catchments. She

imagined an innovative pathway for water institutions as catchment management forums where people meet government in a governance place, and forums can write a proto-strategy for their sub-catchment to be submitted to a CMA, alleviating some of the enormous pressure of developing catchment management strategies and enabling some of the detail a sub-catchment to be taken into account.

The IWQM Policy and Strategy talk a lot about what we need to do and a little about why we need to do it, but much about how we need to do it. Prof Palmer unequivocally supported adaptation as the core strategy, because the only way of dealing with complex things is to watch, notice and change, and to be nimble in shifting. In a context of accelerating climate change, we will have to learn adaptation well and fast. Adaptive management was the first such idea to appear in the literature. Later there was recognition that in order to do this, adaptive planning was required. This was formalised in SA, largely by Prof Kevin Rogers (University of the Witwatersrand), Harry Biggs (SA National Parks) and Sharon Pollard (AWARD) as strategic adaptive management (SAM), and has been successfully applied in the development of an adaptive way of managing a CMA, largely in the Inkomati-Usuthu CMA. Prof Palmer had watched this approach actually working. We do not yet have a written or conceptualised idea of adaptive governance (which would be helpful), or of adaptive monitoring and evaluation (which would be worth working on to make SAM work), or of adaptive implementation (which would be a responsive way of doing things). Catchment management forum workshops provide mechanisms for developing these steps. The Institute for Water Research held five workshops throughout the Eastern Cape at which ordinary people started to work towards developing their ideas of how to form themselves into a forum that could influence, engage and be listened to effectively by a CMA.

### **SESSION 3: FINANCE**

#### **Innovative mechanisms – Traci Reddy, Pegasys**

The financial challenge is that the bottom line is that money is required to fix things. We find ourselves in a developmental state with significant redress challenges and limited resources. There is anecdotal evidence of the impact of poor water quality on the environment, society and health, but it has not been possible to quantify the impact of poor quality, and poor water management, on the country. Once we understand the connections, the issue is how to use water resources effectively and efficiently. In this situation, the fiscus is being squeezed and we need other instruments to generate financial resources.

The water resources crisis provides opportunities to gain political will and momentum that can encourage further prioritisation of resources. Influencing government financing mechanisms provides a critical means of enabling water quality action. Clean technology supported by green economy initiatives and financing mechanisms provides targeted ways of reducing pollution at source. The private sector has a crucial role to play in minimising its impacts on water resources, and collaborating through water stewardship partnerships. The Sustainable Millennium Goal (SDG) processes and climate change funding can support IWQM. Discharges from municipalities have an enormous impact on water resources, and there are thus opportunities to consider improving and restructuring municipal grants to consider water quality impacts. Asset registration and maintenance is crucial for WWTWs.

The current Pricing Strategy addresses the following five areas:

- Water Resource Management Charges, which cover the charges required to manage water resources within the nine water management areas determined in the National Water Resource Strategy (NWRS) 2.
- Water Resource Infrastructure Charges, which relate to the development and use of waterworks, covering charges related to planning, capital costs, operation and maintenance, depreciation, and future infrastructure build on government water schemes.
- Waste Discharge Mitigation Charges, which cover the charging for discharge of water containing waste into a water resource or on to land.
- Water Research Commission (WRC) Charges, which are paid into a national Water Research Fund and are used by the WRC to fund water-centred research and development for South Africa.

- Economic Regulation Charges, which are intended to fund the activities of the Economic Regulator.

The Waste Discharge Charge System (WDCS) is an economic measure to improve water quality and achieve water quality objectives through waste load reduction, either at source or in the resource. The WDCS has been developed such that it comprises two separate charges, namely the cost-recovery Waste Mitigation Charge (which is already part of the Pricing Strategy) and the behaviour-changing Waste Discharge Levy.

Waste discharge charge systems have been implemented in other countries. The insight from the experience of such initiatives includes:

- Waste discharge charge systems have been demonstrated to be effective instruments for WQM; they are theoretically sound and economically efficient.
- Such systems are adaptive to water quality objectives and responsive to monitored conditions.
- A simple charge rate system is understandable and workable.
- Waste discharge charges should be increased gradually, with increases scheduled in advance.
- Non-point sources (NPS) are complex and difficult to manage, but the WDCS included an NPS strategy.
- Waste discharge charges should be implemented as part of broader water quality control in order to facilitate compliance with clear objectives.
- The system should match the institutional capacity required to implement such a system.
- Monitoring and enforcement are important, including regulatory support structures and peer monitoring.
- A charge rebate system on actual discharge is effective
- Enforcement is strengthened where there is local disbursement for mitigation, thus providing double the benefit for using WDCS revenue for WQM.

The Waste Mitigation Charge has four different charges:

- Mitigation through removal of load either through a regional mitigation scheme or infrastructure, or a regional mitigation project.
- Water resource system management for river-reservoir systems to reduce impact.
- Mitigation to downstream users through the recovery of costs in developing and operating additional treatment.
- Treatment of a particular source where treating a single source is effective in reducing load.

The main purpose of the Waste Discharge Levy is to ensure the optimal use of the resource for discharging or disposal of waste. It is therefore based on charging for the use of the resource rather than directly on recovering costs. A minimum charge rate is required to encourage dischargers to treat adequately to meet resource quality objectives. The charge is based on monitored load or on a flat charge rate based on load.

Once funding has been collected, the issue is to consider how to effectively and innovatively invest these financial resources to improve IWQM.

### **Investment frameworks for IWQM – Dr Guy Pegram, Pegasys**

Dr Pegram shared his experience of involvement in the development of various investment frameworks, whether for climate finance or basin interventions, mostly outside South Africa. Finance should be considered from the start of a process of WQM at a catchment level. The concept of an investment framework is a coherent way of looking at how to finance the catchment management plan while the plan is being developed rather than considering finance only after the development of the plan. In many ways a WQM process is more similar to climate resilience strategies than to more traditional water reconciliation strategies.

Water quality has specific needs that influence the way in which it can be financed. Water quality management at a catchment scale is a long-term process that requires coherent action across a range of sectors. It requires a combination or suite of interrelated interventions and sustained effort by a range of actors. Interventions are sustained by local coalitions and partnerships, which require and enable a range of financing mechanisms and sources. Because of the range of players involved, it is

possible to think quite innovatively about how to finance investment frameworks for the improvement of water quality. The development of an investment framework is a cross-cutting process that links into the fundamental characteristics of a water quality management process.

SA is good at developing policies and strategies and even good at developing management plans, but many of the plans have not been implemented. The investment framework and value process requires that sources of finance are understood even before the action plans are developed. If the finance is not available, implementation of initiatives will not be possible. The investment framework forms the bridge between what we want to do and the sources of money. When the issues are seen in terms of sources of funding for implementation, this changes the nature of the debate.

When strategy is developed in SA, funding is sought in only two places, either the fiscus or user charges. This constrains our thinking about what we can do and how we can do it.

The costs of water management are for investment (new infrastructure or rehabilitation), maintenance and operation. There are only three possible sources of funds for water quality interventions: taxes, tariffs or user charges, or fund transfers. Financing may be required if the full amount for a suite of interventions is not available at the outset. The sources of such finance include: development finance institutions (e.g. World Bank, AFDB), commercial banks (for both water quantity and quality issues), impact investors (who are increasingly seeking to make a social impact), green bonds, climate finance and private sector equity. Interventions need to be cleverly designed to match the criteria and fulfil the objectives of the various available sources of finance.

The cash flow for interventions in a catchment needs to be managed. An investment framework needs to consider the implementation of a strategy in a phased manner, with a time-based element, suites of interventions and multiple sources of finance, so that it is sustainable in the long term. Investment frameworks require an outcomes-based programmatic approach, because water quality can only be improved programmatically.

Taking a climate perspective to improving water quality would be valuable in that it would allow access to additional sources of finance (e.g. Green Climate Fund); it would emphasise the importance of cross-cutting interventions; it would take into account the need for both short- and long-term interventions; and from a resilience perspective it would embrace variability.

Different types of interventions have different financing needs. An investment framework for the Lower Limpopo, for example, might take into account disaster resilience, economic resilience or livelihoods resilience, or preferably all three. The interventions would need to be cross-cutting, involving institutional cooperation, physical (infrastructure) interventions, planning and procedures, and information and awareness.

Then the investment framework is developed, the project development lifecycle has to be taken into account. One has to consider the sources of funding that will be approached before even starting the analysis, so that the analysis is tailored to fulfil the conditions of the financier(s). This requires understanding the enabling environment and the investment climate, and defining the investment against these. The feasibility study can then begin in order to answer the questions that the financier will ask.

If a project is to be financeable, it must meet the criteria of having a clear technical description, a clear financial case and viability, and strong management arrangements. A bank will not finance an initiative unless it is clear who owns the process and who will take responsibility. It is then possible to develop a proposal that will enable access to finance, whether commercial, development, fiscal or climate finance.

In the early stage of concept development, consideration is given to the enabling environment (including capacity building, consensus building, legislation, regulation and institutional reform) and the definition of the project (including the definition of services, the identification of the desired outcomes, prioritisation and examination of various alternatives, and pre-feasibility studies). There may need to be a trade-off between the affordability of a proposed intervention and the cost of the impact. A multi-criteria approach could be applied.

In the mid-stage of feasibility and structuring, the focus is on project feasibility (including detailed engineering, environmental, social and economic appraisals) and project structuring (including detailed financial and legal structuring).

In the late stage of promotion and transparency, attention is given to marketing (i.e. promotion of the project and assessment of interest) and transacting (i.e. procuring and negotiating project documentation and finance).

Dr Pegram considered two SA cases that had been considered in the development of the Waste Discharge Charge System (WDCS), namely the Hartebeespoort Dam characterised by eutrophication, and the Upper Olifants characterised by acidification and salinisation.

In order to improve water quality in the Hartebeespoort Dam through the WDCS, a number of interventions were considered including Impoundment interventions, improved monitoring, WWTW upgrading, sewer rehabilitation and strengthening regulatory capacity. These interventions involve institutional, information, infrastructure and natural infrastructure issues. The financing for this complex set of initiatives do not necessarily all have to come from the same source of finance. The potential sources of finance for an intervention in the Crocodile River include public finance from Treasury, municipal budget allocations, waste discharge charges, green/climate grant finance, green/impact-related loan finance and waste discharge levies (taxes).

In order to improve water quality in the Upper Olifants through the WDCS, a different suite of interventions was considered including Impoundment operations, Improved monitoring, Mine-water treatment (through reverse osmosis), regional treatment, strengthening regulatory capacity, and coalitions between government, civil society and the private sector that collectively consider what can be done to improve water quality in the catchment. The potential sources of finance for an intervention in the Olifants River include private finance (mining and commercial), waste discharge charges, water supply tariffs, stewardship contributions, public finance (targeted) and waste discharge levies (taxes).

The WDCS was initially conceptualised as a way of influencing behaviour through charging. The involvement in the processes in the Olifants and the Crocodile showed that the opportunity lay rather in focusing on the rehabilitation of catchments, with finance as one of the tools. A series of interventions was designed, to be implemented over a long period of time, and the WDCS would allow the implementation of the rehabilitation process. Ironically the WDCS is almost an investment framework approach. It creates the framework to develop a catchment plan in a coherent manner that is already looking at sources of finance.

The key messages are:

- There is a need for a coherent investment framework that takes a phased approach to rehabilitation.
- Mechanisms are needed to ensure funding that enables the sustainability of interventions
- A range of finance sources must be matched to the required interventions over time.

## **SESSION 4: PARTNERSHIPS/STEWARDSHIPS**

### **Water stewardship alliances – Dr Mark Dent, Alliance for Water Stewardship**

The concept of 'water stewardship' (although not necessarily the word) occurs very strongly in the National Water Act (1998); it entails collective engagement by all sectors of society under the oversight of DWS (through CMAs and catchment management forums). This is manifested in a number of departmental documents, for example, DWAF Internal Strategic Perspectives (2004) included a diagram illustrating Integrated Water Resource Management that envisaged the various sectors interactively developing options. This does not usurp the decision-making authority of the department. Interaction creates a rich innovative environment for activity and influence by all sectors, within a space regulated by DWS in order to generate a number of options. DWS then has authority to take decisions about which options to pursue. Misunderstanding in this respect has led to delays in implementing water stewardship. The involvement of the sectors in generating options helps with implementation.

Water stewardship has taken place in many parts of the world. In 2009 there was a move to coalesce these into a world alliance for water stewardship. There is now agreement to work towards a common best practice management standard and establish an international alliance for water stewardship by 2018.

The Alliance for Water Stewardship defines 'water stewardship' as the use of water that is socially equitable, environmentally sustainable and economically beneficial. This is achieved through a stakeholder-inclusive process that involves site and catchment-based actions.

The motivation for developing a water stewardship standard include applying global consistency of approach, driving transparency, engaging diverse stakeholders, providing credible recognition, connect the global with the local, creating coherence, establishing a framework for locally appropriate action, and achieving globally consistent outcomes.

The AWS Standard was the result of an international, four-year ISEAL-compliant multi-stakeholder process that responded to the growing need for evidence of robust water risk and impact mitigation efforts. The best management practice is expressed in six steps, namely:

Step 1: Commit

Step 2: Gather and understand

Step 3: Plan

Step 4: Implement

Step 5: Evaluate

Step 6: Communicate and disclose

These six steps are auditable through a certification process; alternatively, the steps can be followed for the purposes of benchmarking one's operations against best practice, as a number of organisations in SA do.

The outcomes of each step contain elements of water quantity, water quality, important water-related areas and governance. The four outcomes cut through the standard which is based on a six-step plan-do-check-act cycle. Performance levels are incorporated through a points system to encourage continual improvement.

The focus is on the impact on the catchment of water-using sites or facilities in terms of water balance, water quality, important water-related areas and water governance, as well as relationships with stakeholders including other water users, communities and ecosystems.

All sectors are potentially part of the space for generating options through the stewardship approach. Water is important for each of the 17 Sustainable Development Goals:

Goal 1: No Poverty: Lack of water is the most extreme form of deprivation for the poor.

Goal 2: Zero Hunger: Water is essential for growing food and enhancing nutrition.

Goal 3: Good Health and Well-being: Health and hygiene require clean water.

Goal 4: Quality Education: Access to schools for girls is impacted by the availability of water and sanitation.

Goal 5: Gender Equality: Women literally carry a disproportionate burden to provide water for the family.

Goal 6: Clean Water and Sanitation: Water and sanitation are closely linked, while reducing pollution and water use both enhance availability.

Goal 7: Affordable and Clean Energy: All forms of energy require water for production.

Goal 8: Decent Work and Economic Growth: Economies thrive or decline based on water availability.

Goal 9: Industry, Innovation and Infrastructure: Infrastructure is essential to deliver water at scale.

Goal 10: Reduced Inequalities: The rich have more access to water while the poor often pay more.

Goal 11: Sustainable Cities and Communities: Urbanisation provides massive threats and opportunities for water provision.

Goal 12: Responsible Consumption and Production: Water is often wasted across society and business can improve efficiency.

Goal 13: Climate Action: The most pressing mitigation action on climate change is water security.

Goal 14: Life below Water: Rivers pollute the oceans while desalination can provide drinking water.

Goal 15: Life on Land: Natural infrastructure and biodiversity prevent floods and droughts and help to clean water for human consumption.

Goal 16: Peace, Justice and Strong Institutions: Water governance is the single biggest challenge and potential solution for global access to clean water.

Goal 17: Partnerships for the Goals: All water risks require action at a scale where partnerships are essential.

There is explicit recognition that water and land resources, uses, users, functions and values across a basin/aquifer system are interconnected and interdependent.

In 2011, the World Economic Forum established the 2030 Water Resources Group, which was launched at the United Nations Climate Change Conference (COP17) in Durban. The aim was to stimulate activity around reducing water risk countrywide, working primarily through governments. DWAF and SAB Miller were the main catalysts. The Strategic Water Partners Network was formed, with the key mission of creating shared value through innovative partnerships. The Minister or Director General of Water and Sanitation chairs the SWPN, which currently has 46 members from finance, local government, industry, business, conservation, agriculture, mining, forestry, energy as well as the Water Research Commission.

Water has been steadily rising in the annual World Economic Forum's Global Risks, and was identified as the foremost risk in 2015 due to the systemic risk triggered by water risk. This year water is in third position, and climate change is in first position (but water is intimately affected by climate change).

There is growing recognition that the agricultural supply chain is affected not only by water flows but also by financial flows and insurance flows. Banks, financial institutions and insurance companies are owned largely through the investment of private companies. The partners in the SWPN are financed by banks, financial institutions and insurance companies, which do not look just at their own interests but at the entire system. Dr Dent suggested that the AWS Standard would be an appropriate guide for best management practice in the SWPN.

Principle 2 of the Declaration of the 2014 National Water Summit was: 'Our decisions shall be informed by both the best available science, research and technology, as well as real-life, local experience.'

Involving people broadly in water resource management provides an avenue for addressing a wide range of social issues, including youth unemployment.

The Alliance for Water Stewardship operates under the umbrella of the International Alliance for Ecolabelling and Sustainability (ISEAL), which has ten credibility principles for overseeing the Standard: sustainability, relevance, accessibility, efficiency, engagement, impartiality, improvement, rigour, truthfulness and transparency.

The AWP Best Management Practice Standard reinforces all the 17 SDGs in various ways.

### **Introducing the Mine Water Coordinating Body – Nick Tandi, SWPN**

The Mine Water Coordinating Body (MWCB), which will shortly be launched, could serve to illustrate innovative partnerships that could be transferable to other contexts.

The Strategic Water Partners Network (SWPN) is a formal multi-stakeholder partnership recognised in the National Water Resources Strategy 2 (2013). It develops collective action to improve water security, and carries out analysis, convening, project development and project scaling.

The SWPN has been working on the following strategic focus areas since 2011 in order to close the anticipated water gap (the estimated gap between supply and demand is 17% by 2030):

- Effluent and wastewater management: municipal and mine wastewater and management and reuse
- Water use efficiency and leakage reduction: municipal and industrial water loss
- Agricultural supply chain water: irrigation water use efficiency and promotion of equitable access to water for food security
- Sanitation: promote access to resilient, cost effective, water efficient sanitation solutions

- Skills development and transformation: development of sustainable economically viable skills for the water sector
- Water stewardship: collective and coherent response to water risk through targeted action and supportive policy environment

The Effluent and Wastewater Management group initiated the Mine Water Coordinating Body.

The reasons for a mine water management programme include water quality concerns; water supply-demand reconciliation opportunity especially in the future; current mine water management is not sustainable beyond mine closure; there is a common interest to develop and implement a sustainable solution but there are divergent views on what the key issues are that have to be addressed.

The Mine Water Management Programme had three phases:

- Pre-feasibility
  - Participatory problem analysis by key stakeholders
  - Initial options analysis for a technical and institutional solution
  - Establishment of a coordinating body that will enable a feasibility study based on above initial options analysis
- Feasibility: Using the pre-feasibility work, the coordination body will lead the process of identifying a programme sponsor that will carry out technical, financial and institutional feasibility studies
- Implementation: Implementation of collaborative sustainable mine water management solutions

The analysis of the interconnected problems yielded four key insights as potential drivers:

- The regulation of mining is inconsistent, based on many pieces of legislation.
- Corporate compliance is diverse. Some mines argue that they go beyond compliance while others need to catch up.
- It is not known how much it would cost to address the mine water management problems.
- Licences are provided to individual mining facilities, and closure is done for individual facilities, but mining licences and closure should perhaps be considered on a regional basis. There are currently lost opportunities for efficiencies in terms of economies of scale, where it makes most sense to locate mitigation systems in a catchment, and what should the oversight role comprise.

The analysis revealed the following opportunities to address key dimensions of the problem:

- Corporate accountability and information, including self-regulation and peer-regulation
- Innovative regulatory and economic instruments
- Mine closure requirements, liability and financing
- Regional planning, management and cooperation.

The following achievements have been made to date towards establishing the Mine Water Coordinating Body:

- The governance structure, including the implementing team, has been developed.
- Key stakeholders and stakeholder groups have been identified.
- Commitment has been secured from public and private sector partners.
- The constitution has been drafted.
- A five-year Business Plan has been developed and initial projects have been identified.
- A three-year budget has been developed for secretariat funding.
- Financial commitment has been secured to fund the secretariat for three years from Eskom, Anglo, Exxaro, Glencore and South 32.

The Mine Water Coordinating Body will enable the investment framework (see Dr Pegram's presentation) as well as the bankability and implementation of interventions needed now and post-closure, for which provision has to be made while the mines are still operational. The intention is to put in place the building blocks for a sustainable future in mining areas.

One of the projects in which the Mine Water Coordinating Body is involved is Mine Water for Irrigation, which is engaged in a trial using mine water for irrigation over 60 ha (30 ha virgin land and 30 ha rehabilitated). Soy and wheat crops will be planted. The intention is to investigate the possibility of a sustainable mining landscape after mine closure in the Mpumalanga area.



Three lessons learnt from the initiatives:

- A wicked problem can be broken down but it requires facilitation.
- Cooperation and cooperative governance are more possible at a smaller scale than at a national level.
- Although they looked for examples outside SA, it was resources in SA that were responsible for the success.

## **Discussion**

Ms Liefferink (FSE) requested clarity on the criteria used to determine membership of the SWPN, and whether membership was by invitation or on request.

Mr Tandi responded that membership of SWPN is open and inclusive. The only condition of membership is that the partner has something to offer, which need not necessarily be financial but could be interest, skills or specialist knowledge.

Ms Liefferink commented that some powerful players with vast economic resources were involved in the SWPN and asked what mitigation or management measures were in place to prevent the assembly of power.

Mr Tandi acknowledged the potential risk. At the start of 2017, DWS invested R2 million in the operation of the SWPN. There was concern about the risk of corporate capture when the SWPN started, but the risks are generally higher in a bilateral relationship than in a larger and more diverse group such as the SWPN.

In response to Mr Viljoen's comments about innovative technology and legislation, Ms Liefferink commented that the cooperative governance requirement of the Constitution hampers enforcement by DWS and enquired whether amendment of the Constitution would be considered in this regard.

Mr Viljoen responded that this issue had been raised that the provincial roadshows for the IWQM project, but the Constitution would definitely not be amended. The IWQM project aimed to make cooperative governance more common and more accessible, especially at operational level. DWS was developing an IWQM plan for the Olifants.

Ms Liefferink asked about DWS's approach to local government.

Mr Viljoen responded that he had been intimately involved in the SWPN's establishment of the Mine Water Coordinating Committee, which is an innovative and adaptive initiative for dealing with mine water management in the Upper Olifants. There had been a workshop on 'What next?' after the establishment of the Mine Water Coordinating Committee. It had been agreed that the next big thing that the group would tackle was wastewater and local government, and how to deal with sanitation. A punitive approach would not necessarily solve the problem, and an innovative and adaptive approach was needed to deal with local government. Initially engagement with local government on that project was dismal. The project then tried a different approach, following the adaptive management principle. Instead of inviting local government directly to attend a meeting, a meeting had been convened with COGTA and SALGA in Nelspruit to discuss how they could contribute to solving the problem of meeting with local government. COGTA and SALGA had already done a root cause assessment of local government in the province and developed a strategy, and invited DWS to participate in the strategy for dealing with local government. They indicated that engagement with local government should be through SALGA and COGTA, which are the face of local government. This strategy would be followed in the Olifants IWQM project. Cooperative governance must be enhanced and operationalised since it formed part of the Constitution and the National Environmental Management Act (NEMA).

Prof Palmer (Rhodes University) commented on how to invest in distributed governance processes that make CMAs effective and forums possible.

Mr Selepe (IUCMA) referred to comments that it was imperative to improve the operation and maintenance of WWTWs and asked how that would find effect in structure and governance. There

seemed to be a duplication of functions between DWS and CMAs; for example, DWS has sections for Planning, Water Sector Regulation and Water Services Support that seem to perform some of the same functions as CMAs.

Mr Selepe observed that IUCMA's assessments are not used for upgrading municipal infrastructure, which indicates a lack of cohesion. Their assessment showed that of the 50 municipalities in the province, only four were compliant, and these were not overloaded. Only six had emergency pollution control dams.

Mr Selepe commented that in terms of legislation, water management functions originate with DWS and are delegated to municipalities. DWS should therefore have control over the way in which the functions are exercised. If a municipality cannot execute the function, DWS should be able to put the municipality under administration in order to protect the water resources. Most WWTWs are run automatically without having an operator on site.

Mr Weston responded that IUCMA seemed to be using the right approach to engaging with local government in the Inkomati catchment.

Ms Brisley responded to the comments on the constitutional mandate. DWS cannot intervene directly in local government according to the Constitution. This is reinforced by the department's own legislation and COGTA. Municipality can be placed under administration. DWS should not aim to do things that it knows it cannot do, but there are processes that can be followed. Municipalities can be placed under administration, and a number of municipalities have already been placed under administration as a direct result of not managing their water services well. This did not always result in the desired outcomes. Taking non-compliant municipalities to court would not necessarily improve water quality. DWS needs to consider ways of supporting local government through various programmes. DWS needs to improve regulation and enforcement in a collaborative manner, and National Treasury could assist in this regard in order to ensure that DWS meets its outcomes. That is one of the biggest challenges that DWS is facing. There is enough support, and DWS must continue working with local government.

Morakane Madiba (Rhodes University) suggested adopting adaptive monitoring and evaluation along with adaptive management, since adaptive management carries the risk of going in circles unless progress is monitored.

Marius Keet (DWS) commented that the IWQM Policy and Strategy contain many good ideas and DWS was looking forward to implementation. DWS needs to ask why initiatives since 1999 had not worked. Did everyone understand them? Were the initiatives too expensive? Did DWS understand what they wanted to do? DWS moved away from the uniform effluent standard to receiving quality objectives, which work well as long as the principles are understood.

Mr Keet commented on Ms Schreiner's recommendation to ensure that what is implemented is worth the expenditure. DWS must think carefully before imposing levies.

Mr Keet commented on governance structures for water quality management. DWS used to have a single directorate for water quality, but the water quality function is now scattered in the department. DWS is undergoing restructuring, and the structure for the water quality function is one of the issues that is being addressed. It is not clear whether CMAs are responsible for conducting water resource management or not. DWS would soon have a strategic session at which it was hoped there would be a final response from top management on the functions of CMAs.

## **SESSION 5: KNOWLEDGE AND INNOVATION**

### **DWS Knowledge Management Strategy – Nwabisa Fundzo, DWS**

The mandate of the sector is complex in nature. DWS works with other sectors and different external stakeholders (both national and international) based on its mandate. The internal environment of DWS produces large amount of data and information on a daily basis (by the national office, nine provincial offices, four clusters and five construction offices), and more knowledge is produced by DWS entities.

DWS creates and manages information and knowledge that result from the policies, legislations and strategies that the department develops as sector leader. There is a need for efficient and effective content development, management and distribution through walk in centres and a call centre. Knowledge and information are acquired through interactions in different forums that exist within the sector. Therefore, knowledge management is a systematic process whereby knowledge needed for an organisation to succeed is created, identified, captured, shared and leveraged. It is practised through activities that support better decision-making;

Knowledge management is everybody's business. Even though DWS is the sector leader, everyone has a role to play in ensuring effective implementation of knowledge management. Hence the department is developing a Knowledge Management Strategy.

It is important to learn from past experience. Those who forget the past are condemned to repeat it. Without a way of capturing and integrating past experience, any development process can quickly dissolve into chaos. Knowledge management helps leverage past experience by making knowledge about past projects, initiatives, failures and success readily accessible. It also enables intensive collaboration across individuals, teams and communities of specialists.

Tacit knowledge is mobile. The most valuable knowledge, skills, and competencies in the department and the sector reside 'between the ears' of individuals.

Knowledge management is important in water quality management. The deteriorating water quality and lack of its effective management comes at a cost and has an impact on economic growth, including the costs associated with clearing of waterways and drainage systems; the costs associated with treating or cleaning affected water, and crop reduction; the costs related to society, public and private health system for treating water borne diseases; and loss of tourism and ecosystem functions.

DWS is developing a Water and Sanitation Services (WSS) Knowledge Management (KM) Strategy, the aim of which is to create a knowledge-centred and learning sector by bridging the gap on fragmented and uncoordinated information while also creating new knowledge, and promoting integrated planning and collaboration within DWS and the sector at large. The draft strategy has five focus areas, which had already been consulted within DWS:

- Focus Area 1: Creating a KM culture within DWS
- Focus Area 2: KM processes and tools
- Focus Area 3: Knowledge sharing and learning
- Focus Area 4: Sector assets and institutional memory preservation
- Focus Area 5: Managing documents, content, records and information services

Ms Fundzo presented KM solutions to some of the WQM challenges facing DWS:

#### Governance and institutional restructuring

The management of water quality within DWS straddles branches and line functions, often resulting in working in silos and pulling in different directions, sometimes with differing priorities. The problem is national and restructuring may take time to implement, but immediate mitigation measures are required to improve water quality.

Knowledge management solutions to the issues include:

- Establishment of the National Water Quality Management Forum to bring together different units within DWS that deal with water quality in order to agree on action plans and ensure integrated management. The Directorate RPW has started the process, and the first meeting was postponed from 11 May to 14 June
- Establishment of a WSS KM Forum, including technical experts to ensure effective management of knowledge created from different fields within the sector including water quality.

#### Capacity building of workforce dealing with water quality

The field of water quality is technical in nature and requires skilled and competent individuals; New entrants in the water quality space need to be properly inducted so that they can understand the priorities of the sector and new international trends. New officials are not aware of the different tools

and legislation they can use in their daily functions to protect the resource. Different ways of capacitating water quality officers and managers are required for sustainable development.

Knowledge management solutions to the issues include:

- Resuscitation of the Water Quality Orientation Course, which stopped in 2009 but was recently started again, with the first course taking place in the week of 23–26 May 2017.
- Having communities of practice within the sector and sharing best practices, as proposed in the draft KM Strategy
- Mentorship, coaching and exchange programmes to expose officials to different environments within water quality, as proposed in the draft KM Strategy
- Easily accessible reading material about new local and international trends based on research, as proposed in the draft KM Strategy
- Water quality liaison meetings with different provincial offices which the Directorate RPW is currently holding on an annual basis.

#### No uniformity in how water quality management concepts are implemented

The management of water quality is taking place in the DWS National Office, different provincial offices, CMAs and elsewhere. The same standards and concepts need to be followed by everyone within the sector.

Knowledge management solutions to the issues include:

Development of a water quality management manual by the National Office, which is updated as new developments are identified to ensure all water quality officers are following the same concepts.

#### Need for increased awareness

The people who suffer most as a result of water pollution are members of the public. They need to be well educated and be involved in decision making, and making their voices heard.

Knowledge management solutions to the issues include:

- Water quality management awareness campaigns in the provinces to ensure that members of the public understand the dangers of water pollution and their role through partnerships.
- Information sharing through the walk-in centres to ensure that citizens are well capacitated and have easy access to information. In this regard, CMAs can also play a vital role in local water management.

#### Knowledge loss due to resignations and retirement

The most valuable knowledge within the sector is tacit, and when employees exit the department and the sector, they leave with a lot of knowledge.

Knowledge management solutions to the issue include:

- Tacit knowledge video capture, which can be used as part of the orientation course and be stored on the information system for all to access, as proposed in the draft KM Strategy
- Knowledge management portal for knowledge harvesting, where experts in different fields including water quality will capture their profiles, the projects they have worked on and are currently working on, the challenges encountered and the solutions
- Case study development as part of knowledge sharing and tapping into expert knowledge
- Resuscitation of WIN-SA to create a platform for municipalities and CMAs to learn from one another and share best practices.

#### Data and information management

Data need to be interpreted into information for sector and public consumption. Information needs to be accessible for improved and informed decision-making. Various information databases are available, such as the Water Management System and eWULA.

Knowledge management solutions to the issue include:

- Integration of information databases to ensure easy and reliable access to information, as proposed in the draft KM Strategy.

The critical success factors of a KM Strategy include:

- Buy-in and support from all within the sector, as KM is everyone's business
- Improved collaboration and sharing of knowledge and best practices within the sector
- Strategic leadership from DWS
- Increased provision of expert knowledge in solving problems within the sector
- Improved transparency, accountability and governance
- Increased learning within the sector, leading to creating a learning sector.

### **Water (Quality) Research, Development and Innovation Roadmap – Dr Nonhlanhla Kalebaila, WRC**

The Water Research, Development and Innovation Roadmap is a ten-year sector plan that has been developed in response to the National Water Resource Strategy and a number of other national priorities including national development.

The Roadmap describes in detail the instruments that have to be put in place in order to make SA water secure, including capacity building, deployment of the right skills, the creation of knowledge, and the development and deployment of appropriate technologies in the sector.

The Roadmap has devised seven broad investment clusters that have been prioritised for research.

Dr Kalebaila presented the seven investment clusters and discussed how each was addressing the water quality challenges:

- Unlock alternative sources of water: Feasible approaches to utilising alternative sources of water, including grey and brackish water; quality assurance for diverse locations are key issues to respond to
- Govern, plan and manage supply: Landscape impacts on water quality in catchments (land use, quality improvement interventions in degraded catchments, etc.)
- Govern, plan and manage demand: Licensing, standards and regulation and what is required to facilitate more effective implementation from an institutional perspective
- Built and ecological infrastructure: Deepening planning and implementation synergies between ecological and built infrastructure as a way of improving quality and managing costs; water treatment technology insertion (beneficiation, energy considerations)
- Efficiency/reducing losses: Alternative sanitation; agricultural and water quality; human behaviour cognitive tools
- Run the water sector as a smart business: Pricing, billing, procurement support tools
- Monitoring and metering: Big data and ICT interventions; monitoring and metering solutions; hydrological monitoring centre.

The WRC's instruments include research projects, research portfolios and programmes in four key strategic areas. The WRC recently realised that in this silo approach did not do justice to research on water quality. The WRC therefore took a decision to move towards a water quality programme, since water quality cuts across all the strategic areas. The WRC was considering establishing advisory panels.

The WRC's Water Quality Programme is guided by the WRC's strategic objectives. The specific objectives of the programme are to:

- Achieve a better understanding of the processes affecting the water cycle, water availability and quality
- Explore new possibilities for increasing the availability of usable water by exploiting nonconventional new water resources
- Facilitate the development and deployment of technical and water governance solutions to improve resilience.

In line with this approach, the programme should establish the evidence, science and solutions for responding to broad, fundamental issues related to:

- Drivers of water quality, by investigating the effect of global change on resource and drinking water quality (e.g. land use/land cover; climate change)

- Pressures directly causing water quality changes by investigating the contribution of anthropogenic activities (emissions and waste discharges) to water quality point and non-point sources of pollution
- State of water quality, by developing a scientific understanding of the hydrological cycle (and interlinkages) and variability of the quantity and quality of water available for use and development in terms of both current and long-term emerging water quality challenges for complex chemical and microbial pollutants
- Impacts of water quality, by establishing an understating of the likely water quality change implications on socio-economic status, as well as ecosystem and human health
- Solutions, by identifying opportunities to reduce water quality risks and vulnerabilities and develop solutions in for addressing water quality challenges in order to enhance water sector resilience and sustain development.

This is an iterative process, as a solution could give rise to further questions and hence further research.

The WADER (Water Technologies Demonstration) Programme is bridging the gap between research and the deployment of innovations into practice. The programme draws together applied science and the pre-commercialisation product from a research project in order to prepare it for deployment. WADER is a partnership between the WRC and the Department of Science and Technology. The aim of the programme is to:

- Demonstrate water technologies
- Assess the performance, validity, impact and suitability
- Build multi-sectoral and cross-disciplinary partnerships
- Disseminate information widely to promote technology adoption
- Promote and support water entrepreneurship and relevant skills.

The VitaSOFT Technology Demonstrator is an example of the WADER Programme in action to address the very pertinent water quality challenge of acid mine drainage. The VitaSOFT process integrates four biological processes with various chemical processes in order to treat acidic sulphate and metal containing wastewaters, achieving water quality of potable standard. Sulphates are removed in an active biological sulphate reducing process where sulphides and alkalinity are generated, making use of a carbon source such as primary sewage sludge or maize silage. These are used for the precipitation of heavy metals in the feed water, specifically iron. The remaining sulphides are removed biologically through biological sulphide oxidation to form elemental sulphur, and chemically through iron hydroxide precipitation to form iron sulphide. Iron sulphide is oxidised in a biological iron oxidising process, regenerating iron hydroxide for use in the sulphide precipitation reaction. A constant source of iron hydroxide is therefore not necessary. Sufficient alkalinity is generated biologically in the process to remove all the original calcium in the AMD as calcium carbonate after the biological sulphide oxidation process without the addition of an external source of lime. Additional lime is required only for the removal of manganese and magnesium. The final effluent is polished biologically in a trickling filter for discharge to the environment or for industrial reuse. Alternatively, it can be treated further in a reverse osmosis system to produce ultra-pure industrial water or potable water.

Other technology demonstration projects could be directed at rainwater harvesting and grey water use from household to municipal levels.

The development of the Integrated Water Quality Management Model, commissioned by the WRC in 2007, was an example of developing knowledge and testing it in practice. The research gap was to address the fragmented nature of policies, strategies, non-aligned legislation and the lack of both cooperative governance and co-ordination related to WQM activities, and to develop a water quality management model for aligning the management of quality of water from catchment to consumer. There was a need for a holistic approach involving all interested people. IWQM promotes innovation and increases the amount of water quality management alternatives available to manage water quality problems.

Research into reimagining sanitation and wastewater treatment has opened up a new area of research in the human sciences. Some of the research relates to the issue of using high-quality drinking water for flushing and possibly substituting grey water or rainwater. The research is also

considering next-generation toilets and considering opportunities to decentralise wastewater treatment.

The WRC generates considerable knowledge and shares this on many platforms, including dialogues, symposiums and knowledge products such as technical, science and policy briefs, career guides, guides and manuals.

## **SESSION 6: MONITORING AND INFORMATION**

### **Role of NIWIS and the DAM Strategy in the management and dissemination of water quality data and information – Mxolisi Mukhawana, DWS**

#### National Integrated Water Information System (NIWIS)

The National Integrated Water Information System (NIWIS) is publicly available on the DWS website. The aim of NIWIS is to provide a single extensive, integrated, accessible water information platform, and to have readily available integrated decision-making information in the water sector for end-user enquiries, analysis and reporting. NIWIS includes information on water quality.

Data are provided on a series of dashboards, including water quality-related information on waste water quality, drinking water quality and WWTWs. Other information in NIWIS includes drought status.

The data in NIWIS come from a number of sources, including the WMS (which is the most common departmental source of water quality data), Blue Drop and Green Drop. The extraction of data from NIWIS is automated, but other systems require human intervention. NIWIS provides a platform for data and information related queries and data requests. NIWIS has an area for interaction with users. In the NIWIS support area, users can write to DWS and register data requests or complaints.

NIWIS data management challenges include:

- Data availability (e.g. Data not captured on time or not captured at all)
- Data accessibility (e.g. Data collected by other institutions such as SAWS, ARC, CSIR that do not disseminate data for free, necessitating the signing of agreements with them)
- Data fragmentation: ten data management systems with various data formats (e.g. A drought dashboard would require data from various systems in various formats).
- Manual data extraction from databases (e.g. Source → Local N-drive → NIWIS, whereas the ideal would be Source → NIWIS)
- Lack of structured data management systems
- Lack automation (e.g. Data in PCs shared using spreadsheets and e-mail)
- Lack of integration among data management systems

#### Data Acquisition and Monitoring (DAM) Strategy

The aim of the Data Acquisition and Monitoring (DAM) Strategy is to develop a model to coordinate and facilitate the sector-wide management of data and information required to populate the national information systems, from acquisition, to processing, storage, archiving, dissemination, and conversion to useful information. The purpose is to improve the efficiency and effectiveness of data governance, data management systems, data life cycle management approaches and collaborations with sector-wide institutions for data sharing.

The issues covered in the strategy include:

- Data governance, including the roles and responsibilities of the DWS National Office, provincial offices and CMAs
- Current water and sanitation data management systems
- Collaboration with other institutions for data sharing
- Management of the data lifecycle.

A D.A.M. Strategy National Workshop is scheduled for 8–9 June 2017 at the Roodeplaat Training Centre.

## **Water quality monitoring networks: Making a case for improvement – Francois van Wyk, Rand Water**

A cost–benefit analysis of water quality monitoring programmes for DWS in 2012 concluded that the net present value (NPV) of the department’s monitoring programme was R25.974 million per annum, or expressed differently, the benefit–cost ratio was R10.77:1. If there is a positive NPV, then what is the problem?

Chapter 14 of the National Water Act requires the establishment of monitoring and information systems. The NWA stipulates that certain things must be done, including the establishment of River Classification, Reserve determination and RQOs; the issuing of licences; the allocation of abstractions; the monitoring of discharges; the management of disasters and incidents; water purification; monitoring of agriculture and industry. We must have a system that allows all this? Does the monitoring programme provide this information? If not, is it because we don’t monitor, or don’t monitor enough (the numerous Rand Water sampling points in the Upper Vaal, for example, suggest we are sampling enough), or because we don’t use the data correctly? Online monitoring is also done in real time, with data communicated via SMS.

Monitoring is labour intensive; even online equipment needs to be checked frequently by skilled people. Samplers need to know what to do in order to collect the sample correctly, know what to do in high/low flow conditions, and observe conditions and surroundings before collecting a sample. Samplers must also ‘observe and inspect’, not just fill sample bottles. The manual sampling system is very well organised. Each sample bottle has a bar code; the date and time are scanned when the bottle leaves the laboratory; the sampler on site has a portable water quality scanner, GPS is built into the system and recorded, and date and time are again recorded; each time the sample moves from one analyst to another it is scanned. These are quality controls, and the issue is the extent to which monitoring is assisting in improving the water quality in the resource.

Monitoring is done at varying frequencies depending on the requirements, which could be online, daily (for operations), weekly (for recreation reporting), bi-weekly, monthly, quarterly, bi-annually (for SASS) or annually. The components that are monitored include organic, inorganic, microbiological, biological, flows and levels. Rand Water conducts monitoring in terms of its ISO 17025 accreditation.

Rand Water manages its data through a Laboratory Information Management System (LIMS). LabWare is the software of choice. Approved data are released for use. Quality Information Decision Support System (QIMDSS) is the software of choice.

The data can be used to generate graphs. Do we know what the graphs mean? Are we spending time actually ‘looking’ at the data? The water quality objectives can be placed in the graph as a backdrop to aid in interpretation. A graph can be drawn to look at the long-term record (e.g. over 15 years).

The monitoring system as conceptualised and designed by Rand Water is not necessarily what the public and catchment management forums want. They may require data on variables that Rand Water does not sample for.

Data reporting can be done via website, Facebook and Twitter. All the fancy reports and years of data have not helped improve water quality in the Hartbeespoort Dam.

There are some innovative advances in monitoring, for example, the Cast-a-Way system, which is placed in the water resource and monitors continuously in real time, with built-in Blue Tooth and GDS. This has an advantage over manual sampling, which is done only during the day time.

Why are we having this debate over things that are not working? What is wrong with the current setup? The obstacles include:

- Meeting a variety of different needs
- Some things are not yet in place so it is difficult to know whether monitoring is being done for the right variables (e.g. with respect to river classification, RQOs or the Reserve)
- Expensive and time consuming
- However much sampling is done, the data are never enough
- Data analyses and reporting must be appropriate



- Laboratory accreditation
- Laboratory capacity (e.g. not all labs have the capacity for monitoring for radio- activity or organic constituents)
- We don't know what we don't know, since there are emerging contaminants (e.g. endocrine disrupters, hormones, viruses).

Even if we have all of the above, we still need competent drivers to operate the system. Information must be effectively utilised to change or improve water quality (i.e. law enforcement, correct licence conditions, abstraction allocations etc.). Knowing exactly how poor the water quality is in the Hartebeespoort Dam is meaningless if you cannot use the information to change it. As Einstein said, 'Logic will get you from A to B; imagination will get you anywhere.'

WQM is like wrestling with a gorilla; you don't stop when you are tired, you stop when the gorilla is tired. Be the Hilux – be 'tougher' and 'smarter'. The biggest shortcoming is not data but knowledge. You cannot manage from your office. You have to get out into the field; you have to knock on doors, push buttons and make yourself unpopular.

Are we making the right management decisions? If not, why not? What do we need? If we have a monitoring programme and we have information systems, why are we still not winning? A monitoring programme cannot predict future water quality. Something more is needed. We need a dynamic catchment 'supermodel' that takes catchment field knowledge into account in addition to water quality data, to predict water quality as well as flows and floods. We need to take data to information, knowledge and wisdom, by bringing together data on land use changes (satellite data); rainfall and runoff data, flows; water quality data; and a limnology model. We do not need to know only what goes into a dam but what changes occur within the dam.

## **SESSION 7: REGULATION**

### **Moving forward with compliance monitoring and enforcement – Anet Muir and Johan-Matthys Greyling, DWS**

DWS is developing a Compliance Monitoring and Enforcement Strategy. The presentation would focus on the Cooperative Inland Waterways Safety Programme (CIWSP), because dams are at the receiving end of water quality. The water quality challenges in dams include eutrophication, algal blooms and aquatic-based aliens. This is a multi-department project involving DWS, the Department of Transport, Department of Environmental Affairs, COGTA National Disaster Management, SA Maritime Safety Authority, SA Police Services, Department of Sport and Recreation, CSIR, SA Navy, Centre for Public Service Administration and relevant communities. There are further applications in terms of compliance monitoring and enforcement using technology. The project involves the integration and coordination of mandates and demonstrates the power of synergy through collaboration between different government and public role-players.

The background to the project was the establishment by the Department of Transport of a safety regulation that required all vessels on inland water to have a licence as well as a skipper. The implementation of the regulation triggered the project. The focus was on safety regulations involving vessels. The success of the project attracted other departments and role-players to the project. The DEA, for example, became involved in the project to tackle the issue of pollution. Clean dams were infested with alien plants spread by weeds and seeds adhering to vessels that the owners moved from affected dams. Submerged water weeds have a huge impact on the quality of water in dams and on fish populations, a negative impact on power generation, irrigation and water delivery, as well as carrying a safety risk (e.g. increased risk of drownings). Eradicating water weeds will cost billions of Rands. One hectare of hyacinth costs R1 000 to clear; within two weeks it will spread to 2 ha which costs R2 000 to clear; within six months it will spread to 4 096 ha which will cost approximately R 4.1 million to clear. There thus has to be a focus on prevention and protection of water systems that have not yet been affected. Chemical solutions that are applied to the water weeds, as well as cooperative governance processes, have to be tested before the public are exposed to them so as not to lose public trust. Each water way has a dam management committee comprising all relevant role players, including municipal disaster management.

The Inland Buoyage System comprises:

- Surface zoning, which indicates where certain activities like boating, fishing, sailing, etc. can take place on a dam without being a danger to each other; no-go areas in terms of dam safety (structure); and the isolation of alien invasive submerged and surface weeds to avoid spreading
- Surface and submerged navigation (navigational profile), whereby buoys and fixed markers are placed at dams according to international recommendations in order to promote safe navigation on inland waters
- Surface access
- Surface liability.

The programme has a water quality reporting and monitoring component which entails:

- Specific monitoring points and the involvement of other role-players in obtaining water for testing
- Water quality benchmark
- Discussion of reports at Dam Management Committees
- Platform to report pollution incidents including fish kills, algal blooms and odours

Wash bays for travelling vessels have been implemented to contain invasive aquatic species. These also become cooperative governance management and enforcement points as well as business intelligence generators, and monitoring points for commercial clients. Wash bays are also used for safety checks with respect to licences, life-jackets, safety equipment and navigation lights for night-time activities.

Enforcement is done through the Blue Scorpions, Green Scorpions and SAPS Water Wing.

Skippers on the water are required to carry a tag to show that the vessel has gone through the wash bay process. If the tag is not back on time, an incident response will be activated, if it turns out that it is a false response due to the skipper's negligence, the costs for the rescue response will be for the skipper.

An Incident Response Activation app has been implemented for reporting accidents, criminal activity, medical emergencies, pollution and fire. The app can be downloaded for free. It includes the option of posting a photo or using a voice note, and generates a GPS position, as well as a call back from the responder within 45 seconds. The local response comprises a SAPS reservist, Fire Protection Association of Southern Africa (FPA), environmental monitor, enforcement officer and gatekeeper. The government response can involve the Blue Scorpions, Green Scorpions, SAPS Water Wing, SAMSA and ambulances.

All of this is being achieved through good will and integration of various mandates, without any project budget or resources. One can only imagine what could be achieved with access to funds and professional support services.

Envisaged future innovations include: cell tower area warning, drone incident support, QR code technology for vessels, international vessel border crossing, Good Samaritan water rescue inflatables, and youth development.

### **Innovative regulation in support of the environment and IWQM – Melissa Fourie, CER**

The Centre for Environmental Rights comprises activist lawyers who help communities and civil society organisations in South Africa realise their Constitutional right to a healthy environment by advocating and litigating for environmental justice.

The CER has been involved only peripherally in the development of the IWQM Policy and Strategy, but has been encouraged to see that important principles and innovations have been included in the documents. The CER has been discussing some of these principles since their establishment in 2009/10. The CER would like to see more consultation of the IWQM Policy and Strategy, particularly with affected communities and civil service organisations, and looks forward to implementation.

There is a place for command and control first before using incentives and voluntary regulation. The advantages of innovative regulation in support of the environment and IWQM include that:

- **It makes it easier to say no:** There are many places in SA where science dictates that water use licences for certain types of activity should never be granted, for example, where effective mitigation would be technically complex and expensive, and the implementation of such measures therefore so unlikely, that a licence should never be granted. There is nevertheless extraordinary pressure on DWS and officials to grant authorisations in these places, not only from applicants but also from other departments (e.g. DMR sometimes grants a mining licence in an inappropriate place and all the other relevant departments are expected to accommodate it) and politicians. It is important to strengthen the position of officials in these situations. One of the most obvious ways is to create proactive legal protection mechanisms, based on sound science that is defensible, that make it easier refuse a licence when necessary. This takes the pressure off officials and DWS. A project has been ongoing for a number of years to identify surface water and groundwater source areas, supported by the CSIR, WRC, DWS and DEA. The source areas are an example of areas where a decision could be taken never to grant a licence. This has been picked up in the IWQM Policy. DWS and DEA are seriously looking at ways to create mechanisms in the National Water Act to provide legal protection. DEA is also look at NEMA section 24.2a to see how the pressure could be relieved with respect to environmental authorisations.
- **It makes it easier to detect and determine violations:** It is surprisingly difficult to determine incidents of non-compliance with the law. Three practices that make it difficult to do so include:
  - The practice of writing impossible licence conditions: DWS may sometimes be in a difficult situation in which the department feels unable to refuse to grant a licence. In such cases the department may issue the licence but include conditions that are difficult or impossible for the applicant to comply with. This scenario is also evident in some mining licences (e.g. when a mining licence is granted to mine in a wetlands, while mining in a wetland is against the law). The applicant also realises that the conditions cannot be complied with and so applies for an amendment application. Since the amendment application cannot be granted, the processing of the application may be delayed. In that situation it is almost impossible to do enforcement as there is not agreement on what the rules are. Criminal enforcement, where it is necessary to demonstrate intention, is completely impossible in such a situation.
  - Where the recommendations in the licence refer to in expert reports (e.g. 'The Licensee must carry out and complete all the activities listed under condition X according to the following: [list of expert reports]'): The inspector is required to go through sometimes numerous expert reports to establish whether there has been an infringement of the licence conditions. However, the expert reports are not written in the form of licence conditions that are capable of monitoring, enforcement or auditing by either internal or external auditors. This is a relatively easy problem to fix, although it could take considerable work. Potentially, the experts could be required to write the conditions to insert into licences in order to give effect to their recommendations.
  - Increasing pressure on external auditors, especially given limited capacity: It is important to limit the scope for external auditors to omit, misrepresent or understate problems. It is worthwhile for DWS to do just one peer review on an external audit report that appear suspect, publicise the omission, misrepresentations or understatements, and potentially prosecute the external auditor. There are examples of consultants having been prosecuted in the environmental sector. This sends a very clear message, and in fact strengthens the position of external auditors, making it easier for them to say no to their clients.
- **It provides access to more resources for regulation:**
  - **Licence fees:** It requires specialist expertise and 'boots on the ground' to do regulation, compliance monitoring and enforcement. Technology can help to some extent, but the job has to be done by people, not computers. Despite this, budgets for regulation do not grow as they should. This has sinister undertones because compliance is not in everyone's interests. Furthermore, we are generally not good at quantifying and communicating the benefits for the country of conducting regulation, and what the costs to the state would be without regulation. There is no point in issuing licences at all without compliance monitoring and enforcement when violations are found. Licence application fees could be adjusted according to a risk-based calculation of the proposed activity (e.g. the licence fee would be higher for an activity that would be costly to monitor), as the IWQM Policy suggests.
  - **Penalties:** It is risky to include the revenue from penalties in the budget, as this creates perverse incentives that may not be advisable in the long run, but the benefits might outweigh

the risks given the status of resources. This is an issue to think about. Some water authorities already generate some of their own funding through penalties.

- **Harnessing capacity from civil society through transparency:** It is commendable that this is a theme of the IWQM Policy. Given the very limited capacity, DWS needs to be smart in this regard and make it very easy for affected parties and civil society organisations to do monitoring of compliance and take enforcement action when DWS cannot. Ms Schreiner referred to 'social supervision' in her presentation. DWS must make it easy to access licences and compliance audits. This could be done by placing the administrative burden on licence-holding companies and making it compulsory in the licence conditions to place the licence on their website and make it available to anyone on request. This condition is included in the EIA regulations and is already common practice. Ultimately, an online database of all licences should be developed. There is evidence that this kind of transparency, and knowing that communities can access the information, changes behaviour. Secrecy aids and abets non-compliance.
- **It makes punishment and deterrence easier:**
  - Licence suspension is a very powerful tool that could be used more effectively. This is usually the last thing that those responsible for enforcement consider doing. Companies are more scared by the risk that they might be forced to stop operating than they are by penalties. Shareholders and banks pay attention to this kind of risk. The administrative requirements, including giving the company notice, have to be strictly followed, but a serious threat of suspension tends to receive immediate attention and sends a strong message throughout the whole sector. Because licence suspension is so effective, the stakes are high and officials who threaten or execute licence suspension are placed in a stressful situation. DWS management support for such situations and the officials involved is absolutely crucial.
  - Penalties: There seems to be broad understanding across the sector that administrative penalties are needed in the SA regulatory system. Criminal prosecution is too onerous and difficult; it does not necessarily give the desired results and is often not appropriate. DWS should be given credit and acknowledged as the department that has taken this process the furthest. DWS is the leader in this transition in the environmental sector. Ms Fourie looked forward to the inclusion of administrative penalties in legislation so that they could be implemented.
- **Exponential power of strategic communications:** In preparation for the presentation, Ms Fourie scanned through DWS's media releases since January 2017 and surprisingly did not find a single one on compliance monitoring and enforcement. She posed the question of why DWS seemed to fear telling people what it was doing in this regard, and what the department was losing as a consequence. She summarised some key points about the effectiveness of communication related to regulation and enforcement:
  - It is well established through studies around the world that most companies that find out about enforcement action against other companies take action (e.g. by spending money on equipment, reviewing procedures or training employees).
  - In their minds, they exaggerate the size of the fine.
  - The mere knowledge that there are inspectors in the area or sector doing compliance monitoring (e.g. publishing a schedule of inspections) causes companies to improve their compliance. This does not require raids of fanfare, but steady predictable inspections, taking action when non-compliance is discovered, and communicating findings to the media, shareholders and banks. Banks and shareholders are not only interested but they can actually influence companies to comply with the law, but they need information and strong messages directly from the regulator in order to do so, and their hand is strengthened by the existence of penalties. The CER has conducted a study entitled Full Disclosure, which looked at 30 JSE-listed companies and compared what they say about compliance to their own shareholders and what is known from answers that Ministers give in Parliament and relevant public department reports. The report is available on the website (<http://fulldisclosure.cer.org.za/>).
  - The public and communities also need to know about compliance monitoring and enforcement activities. This is essential for building trust and credibility among those who live with the effects of violations.
  - Journalists love writing, and the public love reading, stories about compliance monitoring and enforcement action. This is an easy form of communication. Other companies take action

when they hear about enforcement at another company. Not only the print media but also the social media are a powerful tool. DWS is engaged in enforcement and should tweet about what it is doing. The deterrent effects are lost if enforcement is carried out but the community is not informed. Even a small amount of strategic communication could have a deterrent effect. DWS Communications Branch needs to be involved in these conversations.

## **Discussion**

Ms Liefferink (FSE) expressed gratitude for the opportunity to participate in the symposium and for the excellent presentations. She had been informed by DWS that Rand Water would not be able to continue with continuous monitoring due to funding constraints and asked whether this was indeed the case. Civil society was concerned that monitoring was conducted on the same day of the week and at the same time, and only a small range of variables was monitored. A broader spectrum of variables needs to be monitored, and diurnal fluctuations in water chemistry and discharges need to be measured, as well as the effect of rainfall events.

Ms Liefferink was concerned that the many DWS officials who attend catchment forums do not have decision-making power. It was frustrating for civil society to attend forum meetings at great opportunity and financial cost without DWS decision-makers being present. There seemed to be significant fragmentation in DWS.

Ms Liefferink was heartened that the IWQM Policy and Strategy place emphasis on the role of civil society as watchdogs; however, most of the affected communities are characterised by widespread poverty. It is almost impossible for them to attend catchment forums. There is a need not only to capacitate them with knowledge, but also to provide financial support.

Victor Munnik asked about the status of narrative water quality reporting. He asked whether the value added through detailed analysis of a variety of factors was ever compiled in written reports.

Mr F van Wyk (Rand Water) responded that not enough is recorded. Even if a report is compiled, it is generally saved on the individual's computer rather than being archived. Not enough people sit and look thoroughly at the data; they tend to look at the data only when they are requested to do so. The data need to be constantly interrogated. People must look for things that are not being asked. We should appoint people just to look at data. Rand Water has data going back to 1950s, but much is in handwritten format and needs to be digitised. Another hurdle is the feeling that the data are Rand Water's intellectual capital and should be kept confidential.

Mr J van Wyk (DWS) was frustrated that despite constant evidence of non-compliance, often by local government, nothing is done. Lack of capacity and funding constraints are acknowledged as the root of the problem. The problems are understood, but DWS is not achieving what it is supposed to.

Ian Midgley (Eskom) commented that many different organisations monitor water (sometimes in the same catchments), but the information is not shared. We need more integration and collaboration. Eskom had identified changes in some area but not in others. There had been changes in water quality the Komati catchment, for example, which need to be addressed.

Mr Weston responded that DWS needs to play the role of an honest broker to address the dire need to draw information together.

Prof Palmer (Rhodes University) noted that delegates had heard a lot about the science of water quality. She had been trained and had conducted research for many years in how to deal with water as a multivariate phenomenon. Neither the chemistry of water quality nor its interaction with flow, however, are as difficult as the social relationships around controlling pollution. The Symposium has not discussed power differentials, politics, or decisions that are made without clear interrogation of whether we want the possible short-term gain as opposed to long-term decision-making. We very seldom clearly articulate, when we look at our principles of equity, sustainability and efficiency, whether we have really negotiated the deals between those three values. We very often go straight to considerations of efficiency or profit, and trust that somehow equity, fairness and sustainability will emerge. Much of the conversation at this Symposium has been focused on science and technical

issues but even the science is showing us that not all is well, and not all the solutions will come out of the scientific domain.

Mr Weston concurred that this was an uncomfortable space for many scientists.


Phawen Maluleke (DRDLR) observed that the Symposium had shown that there were many developments, and innovative forums had been formed at local level, focusing on things such as mining, for example, but mining is easier to problematise because of the legislation that governs that environment. There is funding for organisations in those areas in order to reach consensus about water, but there are gaps in basic service delivery for deep rural areas and communities, which do not have sufficient access to water and do not reap the benefits of organised forums. He recommended funding to bring communities on board.

## CLOSURE

Mr Viljoen thanked the speakers for their presentations and everyone for their attendance and participation. He invited delegates to submit any further comments by email.

  
.....  
DWS Project Manager  
Pieter Viljoen  
Scientist Manager: Water Quality Planning

Date: 13/06/2017

  
.....  
PSP Team Leader  
Derek Weston  
Associate Director: Pegasys

Date: 13/06/2017

## APPENDIX 1: ACRONYMS

AFDB	African Development Bank
AMD	Acid mine drainage
ARC	Agricultural Research Council
AWARD	Association for Water and Rural Development
AWS	Alliance for Water Stewardship
CER	Centre for Environmental Rights
CMA	Catchment management agency
CME	Compliance monitoring and enforcement
COGTA	Department of Cooperative Governance and Traditional Affairs
DAFF	Department of Agriculture, Forestry and Fisheries
DAM	Data Acquisition and Monitoring
DEA	Department of Environment Affairs
DMR	Department of Mineral Resources
DPE	Department of Public Enterprises
DRDLR	Department of Rural Development and Land Reform
DRDLR	Department of Rural Development and Land Reform
DWAF	Department of Water Affairs and Forestry
DWS	Department of Water and Sanitation
EDC	Endocrine-disrupting chemical
EIA	Environmental impact assessment
EU	European Union
FSE	Federation for a Sustainable Environment
GCIS	Government Communication Information System
GDP	Gross domestic product
GWS	Global Water Solidarity
ICT	Information and communication technology
ISEAL	International Alliance for Ecolabelling and Sustainability
IWQM	Integrated Water Quality Management
JSE	Johannesburg Stock Exchange
MWCB	Mine Water Coordinating Body
NDP	National Development Plan
NEMA	National Environmental Management Act
NIWIS	National Integrated Water Information System
NPV	Net present value
NWA	National Water Act
NWRS	National Water Resource Strategy
NWRS2	National Water Resource Strategy 2
NWU	North-West University
PC	Personal computer
PFMA	Public Finance Management Act
R&D	Research and development
RPW	Resource Protection and Waste
RQO	Resource quality objective
SA	South Africa
SALGA	South African Local Government Association
SAM	Strategic adaptive management
SAMSA	South African Maritime Safety Authority
SAPS	South African Police Service
SAWS	South African Weather Service
SDG	Sustainable Development Goal
SWPN	Strategic Water Partners Network
TCTA	Trans Caledon Tunnel Authority
UN	United Nations
WDCS	Waste Discharge Charge System
WESSA	Wildlife and Environmental Society of South Africa
WMA	Water management area
WMS	Water Management System
WQM	Water quality management

WRC	Water Research Commission
WUA	Water user association
WWF	World Wide Fund for Nature
WWTW	Wastewater treatment works



## APPENDIX 2: LIST OF PARTICIPANTS

### Present:

Name	Surname	Company/Department
Tswelopele	Pida	African Rainbow Minerals
Hannes	De Wet	Agri MP
Janse	Rabie	Agri SA
Janse	Rabin	Agri SA
Mark	Dent	AWS
Misaveni	Ngobeni	BNT
Melissa	Fourie	CER
Amanda	Mkhonza	CER
Johan	Kapp	CRM
Sibonginkosi	Maposa	CSIR
Matome	Mathetha	CSIR
Edwin	Mametja	DAFF
Nomvuzo	Mjadu	DAFF
Takalani	Sithi	Department of Tourism
Joan	Arrikum	DPE
Andretta	Tsebe	DPE
Phawen	Maluleke	DRDLR
Magamase	Mange	DST
Tsakane	Baloi	DWS
Wilna	Bezuidenhout	DWS
Eustathia	Bofilatos	DWS
Marie	Brisley	DWS
Laura	Dotse	DWS
Fanus	Fourie	DWS
Nwabisa	Fundzo	DWS
Johan	Greyling	DWS
Rachalet	Grobbelaar	DWS
Geert	Grobler	DWS
Jackie	Jay	DWS
Millicent	Kabwe	DWS
Marius	Keet	DWS
Kwaila	Lamola	DWS
Knowledge	Langa	DWS
Musa	Lubambo	DWS
Maduvha	Maseda	DWS
Patrick	Mlilo	DWS
Zama	Mncwabe	DWS
Ndileka	Mohapi	DWS
Lerato	Mokoena	DWS
Lebo	Mosoa	DWS
Thobile	Mthiyane	DWS
Anet	Muir	DWS
Mxolisi	Mukhawana	DWS
Moses	Mukota	DWS
Namisha	Muthraparsad	DWS
Beason	Mwaka	DWS
Noxolo	Ncapayi	DWS
Tovhowani	Nyamande	DWS
Bongizenzo	Nyawo	DWS
Rivashi	Panday	DWS
Sputnik	Ratau	DWS
Isa	Thompson	DWS
Nnzumbeni	Tshikalange	DWS
Itan	Tshohale	DWS
Jurgo	Van Wyk	DWS
Niel	Van Wyk	DWS

<b>Name</b>	<b>Surname</b>	<b>Company/Department</b>
Fred	Van Zyl	DWS
Pieter	Viljoen	DWS
Barbara	Weston	DWS
Luvuyo	Zigana	DWS
Anne	Kilian	Engineering News
Ian	Midgley	Eskom
Lutho	Totsa	Eskom
Mariette	Liefferink	FSE
Gabi	Khumalo	GCIS
Annah	Ngope	Glencore
Lynette	Tungwane	Glencore
Joanna	Goeller	Gold Fields
Zeveli	Masuku	Govan Mbeki Municipality
Victor	Munnik	Independent
Marcus	Selepe	IUCMA
Stenly	Makuwa	Johannesburg Water
Bertus	Bierman	Lebalelo WUA
Shalene	Janse van Rensburg	Midvaal Water
Marina	Krüger	Midvaal Water
Robert	Davel	Mpumalanga Agri
Iqbal	Mohamed Ali	National Treasury
Sara	Bopape	NTD
Amanda	Nyingwa	Pegasys
Guy	Pegram	Pegasys
Traci	Reddy	Pegasys
Barbara	Schreiner	Pegasys
Derek	Weston	Pegasys
Francois	Van Wyk	Rand Water
Morakane	Madiba	Rhodes University
Tally	Palmer	Rhodes University
Heather	Booyesen	Samancor
Shane	Laubscher	Samancor
Bongani	Mtsweni	Samancor
David	Schaub-Jones	SeeSaw
Marilyn	Govender	South African Sugar Association
Vukosi	Tinghisi	South Deep Gold Mine
Michelle	Proude	SWPN
Nick	Tandi	SWPN
Tinashe	Mukuta	University of Pretoria
Willem	Hazewindus	WESSA & ARMOUR
Nonhlanhla	Kalebaila	WRC
Robyn	Arnold	Write Connection
Samir	Randera-Rees	WWF
Klaudia	Schachtschneider	WWF
<b>Apologies:</b>		
Bashan	Govender	DWS