

water & sanitation

Department: Water and Sanitation REPUBLIC OF SOUTH AFRICA

WQM POLICIES AND STRATEGIES FOR SOUTH AFRICA

WP 10978

IWQM STRATEGY

WATER IS LIFE, SANITATION IS DIGNITY

WHAT IS GOOD/BAD WATER QUALITY?



- Water Quality: Term used to describe the **chemical**, **physical**, **biological and aesthetic characteristics** (properties) of water, usually in respect to its suitability for an intended purpose (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** and it **has the potential to cause harm** (to people and their health, safety and welfare; to the environment; or to property).

SECTORS IN SOUTH AFRICA THAT RELY ON GOOD WATER QUALITY AND/OR HAVE AN IMPACT ON WATER QUALITY



Mining & Industry



Agriculture



Recreation



Environment



THE MANAGEMENT CYCLE STARTS WITH OUR RIVERS AND AQUIFERS

River

Discharge

Water Water

- The quality of water in our Rivers and Aquifers affects the quality of water the end user receives e.g. affects the quality of water in our taps, to grow crops and provide to livestock, manufacturing processes and for recreational purposes (fishing, boating, canoeing, etc.)
- When the water we use, re-enters the system (run-off/direct discharge), it affects the quality of the water which a user receives downstream.
- This dynamic has influenced our management approach

Iser

HOW DO WE MANAGE WATER QUALITY IN OUR 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 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:
- The measures may be achieved through the use of:
 - Legislation e.g regulations to control impacts
 - WQ Modelling and development of strategies and allocation plans
 - 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

DETERIORATED WATER QUALITY CAN HAVE MANY DIFFERENT APPEARANCES



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WATER QUALITY TRENDS



According to stats SA and the National River System Accounts study, one of the main drivers in the decline of our rivers 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"

WATER QUALITY STATUS IN SA

Most predominant constituents of concern in SA:

- Nutrients
- Salts
- Microbial contamination
- Urban Runoff & Litter

Other issues that have been identified are

- Acidification
- Siltation/sedimentation,
- Heavy metals, and
- Persistent Organic Pollutants (including agro-chemicals).
- Radiation
- Thermal Pollution
- Nano-particle pollution

For many of these the exact extent at a national scale is unknown.





In South Africa we are faced with many of the problems related to poor water quality; largely attributed to the challenges we have with managing the various sources of pollution. agricultural drift & run-off



Air pollution



Industrial wastewater discharges



Challenges with managing run-off from un-serviced areas



urban run-off



Challenges with managing mine water

Carolina water crisis is a rainstorm away





Challenges with managing sewage water





Bloemhof - Vaal River Fish Deaths in the Vaal River (Bloemhof)

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WATER QUALITY MANAGEMENT CHALLENGES





- Vandalism of Infrastructure
- Dysfunctional WWTW's
- Lack of sufficient maintenance plans
- Poor budgeting
- Lack of sufficiently adequate / 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

WATER QUALITY MANAGEMENT CHALLENGES









- Uncontrolled discharges from abandoned mines and runoff from discarded mine dumps (legacy issues).
- Inadequate **financial provisioning** for rehabilitation Insufficient precautionary planning, regulation and
- Insufficient precautionary planning, regulation and enforcement
- Insufficient compliance with licence conditions; inappropriate licence conditions; inadequate enforcement capacity
- Land degradation and over-grazing
- Inappropriate fertilization practices/over-fertilization
- 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

FUTURE TRENDS AND WATER QUALITY IMPACTS

- Climate change
- Unconventional Gas Exploration
- Population growth and increased issues with the Water-energy-food security nexus
- Growth of inadequately serviced densely populated settlements
- Growth in water re-use



In response to the country's need to take an **improved INTEGRATED approach to Water Quality Management (WQM)**, the Department of Water and Sanitation initiated a project to **revise its current WQM Polices** and **develop a national**, **integrated Water Quality Management (WQM) Strategy**.



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IWOMS PROJECT PHASES

Project Commenced : 4th October 2015

Completed Oct 2015 -Jan 2016	Inception	• Clarify the expectations and scope for the project						
Completed	Assessment	 Comprehensive literature survey Identification of the WQ and WQM Challenges in SA 						
Completed Approved for Gazetting	Policy	 Define Policy Principles Revise, update & integrate existing WQM policies 						
Completed	Strategy	• Develop WQM strategy based the direction provided by the Policy, findings from assessment phase and inputs from stakeholders.						
Current Phase March 2017 – Sep	Policy into Practice	• Develop a pragmatic plan to implement, monitor and evaluate the execution of the policy and strategy.						

PROJECT PROGRESS TO DATE

Final documents: www.dws.gov.za/projects/iwqms

Inception Report

- Review of WQM Policies & Strategies
- Review of WQM Institutional Arrangements
- Review of WQM Instruments
- WQ and WQM Challenges in SA
- WQ Glossary
- Capacity Building Strategy
- Stakeholder Communication Strategy
- Newsletter (1) and (2)
- Note on the WQM Policy Principles
- WQM Policy: Edition 1
- Note on the Strategic Framework
- IWQMS Strategy: Edition 1
- Note on the WQM Function
- Newsletter 3
- 9 Provincial Workshops & National Inter-Dept Workshop
- IWQM Policy Edition 2
- IWQMS Strategy: Edition 2
- IWMP Implementation Plan Edition 1

HOW WOM PRINCIPLES, POLICY AND STRATEGY ALIGN



Strategic

Provides the overall vision for WQM in SA and set out the fundamental norms, rules, or values that represent what is desirable to the country in terms of WQM. Based on a revision of existing policies. It strengthens existing policy but also proposes a few new positions.

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 NDP, NWRS-2, GWS, SDGs)

> Describes, **roles, responsibilities, timeframes and resource requirements** to achieve the priority strategic actions.

Roll-out of Implementation Plan & Monitoring and Reporting on implementation performance and effect the policy and strategy implementation has had on WRs

Where does the IWQM Strategy fit in?



CORE CONCEPT:

Water Quality affects the economy and societies well-being

Water quality is a developmental issue

Although the Department of Water and Sanitation 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.



Water Quality is Everyone's

PROJECT ENGAGEMENTS

Project Administration Committee (monthly)

PAC 15 Meetings

Project Management and Steering Committee (Milestones)

- PMC 07 (22 June 2017)
- PSC 05 (26 June 2017)

Stakeholder Engagements:

- WQM Policy Presented to DG/Top Management (Oct 2016)
- Provincial Roadshows (Oct/Nov 2016)
- DWS Alignment Meeting (Jan 2017)
- National Inter-Departmental Workshop (Feb 2017)
- Focus Group Meetings NT/COGTA/SALGA/DWS (April 2017)









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Policy

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IWOM POLICY FRAMEWORK

Vision

/vi-zhun/

The image or insight of how, something could or should be in the future

Government, in partnership with private sector and civil society, secures water that is fit for use, for all, forever!

PILLAR A: Taking an inclusive approach to IWQM

PILLAR C: Financing IWQM PILLAR D: Building the knowledge and capacity base for IWQM

IWQM Policy Values, Goal and Principles

Relevant Legislation, Policies and Strategies related to WQM

Applying integrated,

PILLAR B:

adaptive IWQM

Constitution of South Africa

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 be able to successfully address the challenges.

Provides a framework for an integrated, risk-based and adaptive approach to the management of water quality.

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.

Describes the policy with regard to the knowledge, human resource capacity and information requirements to achieve integrated WQM in the Sector.

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IWOM POLICY PRINCIPLES

- 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

• Principles in blue are "new" policy positions. The term "new" refer to new in how it applies to IWQM.

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LEGISLATIVE IMPLICATIONS

Legislative Amendments

- 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 allow for the promulgation of a Money Bill for the Waste Discharge Levy;
- Amendment to allow for a **pollution register**; and
- Amendment to allow for **administrative penalties**.

IWOM POLICY TO GOALS



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ADDRESS EACH OF THE WOM CHALLENGES IDENTIFIED IN THE ASSESSMENT PHASE

GOAL 1 Aligned Policy, Strategy and Legislation	GOAL 2 Improved Governance	GOAL 3 Improved, Effective and Efficient WQM Practice	GOAL 4 Innovative Finance	GOAL 5 Improved Knowledge and Information Management
Strategic Issue 1 Harmonise Policies and Strategies to Enable Improved IWQM Strategic Issue 2 Legislative Review and Amendments to Enable IWQM	Strategic Issue 3 Improve IWQM Institutional Structuring Strategic Issue 4 Formalise Governance Frameworks to Support Non- governmental Engagements	Strategic Issue 5 Improve Coordination in Integrated Planning Strategic Issue 6 Strengthen IWQM Regulation, Compliance and Enforcement	Strategic Issue 8 Improve and Sustain Fiscal Support for IWQM Strategic Issue 9 Develop Pricing and Incentive Systems that Support IWQM	Strategic Issue 10 Strengthen Monitoring and Information Management Strategic Issue 11 Build WQ and WQM Capacity through Education, Training and Communication
Strategy:Outlines why it is aPresents the strate	strategic issue gic objectives and	Application of Systems-based Adaptive Management Approaches		

STRATEGIC OBJECTIVES AND ACTIONS (EXAMPLE)



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Implementation Plan

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MAKING A SHIFT

- Technically based regulatory approach, headed by DWS, is not yielding the required changes in water quality status.
- Water resource quality continues to decline.
- Current strategies are either not being implemented (due to limited resources) or are not effectively dealing with the increasing water quality challenges arising from, amongst other things, economic and population growth, historical legacies, and aging infrastructure.

To be able to address current challenges and be prepared for future challenges, a new approach is required. 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.

TOWARDS THE IMPLEMENTATION PLAN

Articulate in a structured way, how the priority objectives in the strategy can be pragmatically implemented. should clearly articulate the roles and responsibilities, resource (financial and human capacity) requirements and linkages and dependencies between key activities.



as implementers or champions of aspects of the Plan

TOWARDS THE IMPLEMENTATION PLAN

Core considerations for the formulation of the implementation plan include:

- There are parts of the strategy that need to be **initiated rapidly**, with the understanding that the action will **quickly generate results**. Other actions will be initiated in the short term knowing that the outcomes will only be realized in the **longer term**.
- **Prioritising critical concerns**, while ensuring that other issues are addressed through on-going management or monitoring for future prioritisation and action (i.e it should address the critical gaps and this that aren't working but should ignore the things that are working)
- Although it is a national plan, it should inform plans at catchment and local scales,
- Should enable an adaptive response to changing circumstances and achievements based on effective on-going monitoring and evaluation.
- Should encourage/enable integration and co-ordination



DEVELOPING A STRATEGY & IMPLEMENTATION PLAN REQUIRES DECISIONS

Some questions that were asked:

- 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?

PRIORITIES FOR IMPLEMENTATION

- Through the Provincial Roadshows and other stakeholder engagements priorities for implementation were identified
- The strategic goals that were prioritised are:
 - Aligned Policy, Strategy and Legislation
 - Improved Governance
 - Improved, Effective and Efficient WQM Practice
 - Innovative Finance
 - Improved Knowledge and Information Management
- Therefore, all the strategic goals were found to have aspects that need urgent attention



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Focus on the business of water quality management in this first period of implementation should be towards:

STRENGTHENING THE WATER QUALITY MANAGEMENT

 Whilst this may involve some elements of organisational design, this would ostensibly be about resolving roles and responsibilities as well as determining accountability.

The identification of a champion 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.

IMPROVING OUR INFORMATION MANAGEMENT

 The need to improve our systems to support adaptive management responses is critical and whilst much effort has been applied within DWS, the need to create more integrated systems across Government is becoming increasingly important.

The need for the strengthening of information management and decision support systems is critical if we are to manage our catchment adaptively.

MOBILISING THE SECTOR

- The need to develop a sector-wide approach underpins the philosophy of IWQM.
- There will continue to be, questions regarding roles and responsibilities between various actors, but noting that these will be resolved through experimentation and implementation means that efforts to mobilise across a wider spectrum of actors needs to be initiated sooner than later.

Establishing the "Community of Practice" across the sector is a significant priority in initiating and maintaining sector wide engagement.



- Nothing breeds success, like success. It is important that as a sector we can demonstrate that we can fix key challenges in prioritised catchments or systems.
- The broader water quality management approaches, mentioned above, will support these impacts on the ground.

Priority catchments must be identified and processes initiated to address the core issues of eutrophication, salinization, urban pollution, sedimentation, and acidity/alkalinisation. The development of IWQM plans will be a priority in supporting this drive.

TOWARDS THE IMPLEMENTATION PLAN (EXAMPLE)



Strategic Issue	Strategic Objective	Strategic Action	Specific Activity	Expected Output	Inter-links	Timeframe		frame	Champion/Di iver	r Collaboration and Sector Support						
						2010	2010	9 2020		National Government	Provincial Government	LG I		Impacting Private Sectors		Civil Society
						2018	2019					Municipalities	Mines	Industries	Agriculture	
SI1: Harmonise Policies, Strategies and Legislation to Enable Improved IWQM	SO1a: Policies, Strategies and Legislation impacting upon IWQM are harmonized	SA1: DWS to ensure that policy, strategy and legislative development and refinement within DWS addresses IWQM	DWS: Policy&Strategy to coordinate with other DWS Directorates on development of Policy and Strategies to ensure alignment with IWQM	Relevant Policies, Strategie and Legislation update within DWS to ensure effective IWQM. This is an on going initiative	s e -				DWS: CD Policy and Strategy							Civil Society to be engaged through catchment manafemetn Forums and Catchemtn committees
		SA2: Sector departments to harmonise policies strategies and legislation to support IWQM	DWS: Policy to ensure alignment with CARA, NEMA MPRDA, and related policie: and strategies	Relevant Policies, Strategie ,and Legislation update within Government to ensure effective IWQM. This is an on going initiative	s e -				DWS: DDG P&I	COGTA DWS DEA DMR DoE						Civil Society to be engaged through catchment manafemetn Forums and Catchemtn committees
		The National NM Source Strategy, devel part of the Waste Di Charge System to be updated and finalised implement non-point source strategy The finalised NNPS communicated to all WQM officials and sec The Implementation G to be developed and incorporated in all rele operational guidelines	The National Non-Poin Source Strategy, developed a part of the Waste Discharge Charge System to be revised updated and finalised	A finalised National Non-Poin Source Strategy ,	t				DWS: HO (WDCS champion)	DEA						Civil Society to be engaged through catchment Forums and Catchemtn committees
			The finalised NNPS to be communicated to all relevan WQM officials and sectors	e t Informed WQM Officials and sector. This is part of an on- going initiative.												
			The Implementation Guideline to be developed and incorporated in all relevant operational guidelines	2												

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- **Gazette** the IWQM Policy for Public Comment
- Recommendations on WQM Function and Institutional Structure – July 2017
- **National Symposium** 31 May 2017, Pretoria, Focus on innovative approaches to WQM. Space is limited.
- Finalise the **Implementation Plan** for IWQM: Draft in August 2017. Series of focus group discussions to co-create / populate the plan
- **NB:** Training of Regional Champions: August 2017
- Final printing of Policy, Strategy and **Implementation Plan** for distribution: September 2017.

SAVE THE DATE: IWQM SYMPOSIUM

INTEGRATED WATER QUALITY MANAGEMENT (IWQM) SYMPOSIUM

Symposium Theme: TRANSFORMING INNOVATION INTO PRACTICE

Date: 31st May 2017 Registration: 8h00 - 8h30 Venue: Centurion (TBC)

The Department of Water and Sanitation invites you to participate in a one day symposium on innovative water quality management solutions and approaches to secure water that is fit-for-use in our surface and underground water resources

Formal invitation to follow If you are interested in attending contact.

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Thank you

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