

Focus on CSIR Research in Water Resources

CSIR Natural Resources
and the
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Resource-directed management of water quality series

The promulgation of the National Water Act, 1998 (NWA, Act No. 36 of 1998), various other acts, policies and White Papers gave a new direction to water resources management and specifically management of water quality in South Africa.

In terms of the NWA (36:1998), the most important management functions are protection, management and equitable allocation.

The fundamental principle guiding the NWA (36:1998) of South Africa is that water is a national resource, owned by the people of South Africa. This necessitates an integrated source-, resource- and remediation-focused approach to water quality management.

To address one aspect of implementation, the CSIR developed the Resource Directed Management of Water Quality (RDMWQ) Series as part of a Department of Water Affairs and Forestry (South Africa) project. The RDMWQ series provides policy, strategy and management instruments to facilitate the management of water quality from a water resource perspective.

The objective of the Series is to facilitate the integration of the source and resource directed management approaches in an uniform and structured manner. The RDMWQ Series is therefore comprised of the following volumes:

Volume 1: RDMWQ Policy

The RDMWQ Policy documents relates specifically to management of the use and protection of the water quality component of inland water resources, including surface water courses, groundwater, estuaries and wetlands. It also addresses how this "resource directed" management of water quality should influence the management of anthropogenic activities that modify the water quality in water resources.

Volume 2: RDMWQ Strategy

The RDMWQ Strategy is the implementation plan for the RDMWQ Policy. It addresses "who should do what by when", explicitly linking the RDMWQ Policy to management approaches and management instruments to facilitate its practical and pragmatic implementation.

Volume 3: Institutional Arrangement for RDMWQ

This report focuses on institutional and organisational issues, with the objective of clarifying roles and responsibilities.

Volume 4: RDMWQ Management Instruments

This is a suite of management instruments to assist the Regional Offices to make the water quality component of RDM operational in licences and to assist the Department with the evaluation and issuing of licences. The Management Instruments forms part of the iterative RDWQM framework for making RDM operational in licensing, provided as Figure 1.

The Management Instruments consist of the following sub volumes:

Volume 4.1: Guideline on Catchment Visioning

This Instrument describes a practical process for developing a catchment vision, based on societal values and aspirations. The vision is then disaggregated into component management objectives.

Volume 4.2: Guideline for determining Stress, Resource Water Quality Objectives (RWQO) and the Allocatable Resource

The aim of this guideline is to provide a practical, consistent approach to the determination of RWQO, by integrating the results of the Catchment Vision, Resource Classification and Reserve (i.e. Resource Directed Measures). It provides an approach to operationalising these RWQO in the evaluation of licence applications through the allocatable resource. The guideline is supported by the RWQO Model and User Guide to streamline the implementation of this guideline.

Volume 4.3: Guideline for Monitoring & Auditing

This document provides guidelines for the monitoring required for resource directed management of water quality. It gives guidance on designing a water quality monitoring programme, introduces a long term monitoring vision for RDMWQ and provides guidelines for managing performance monitoring.

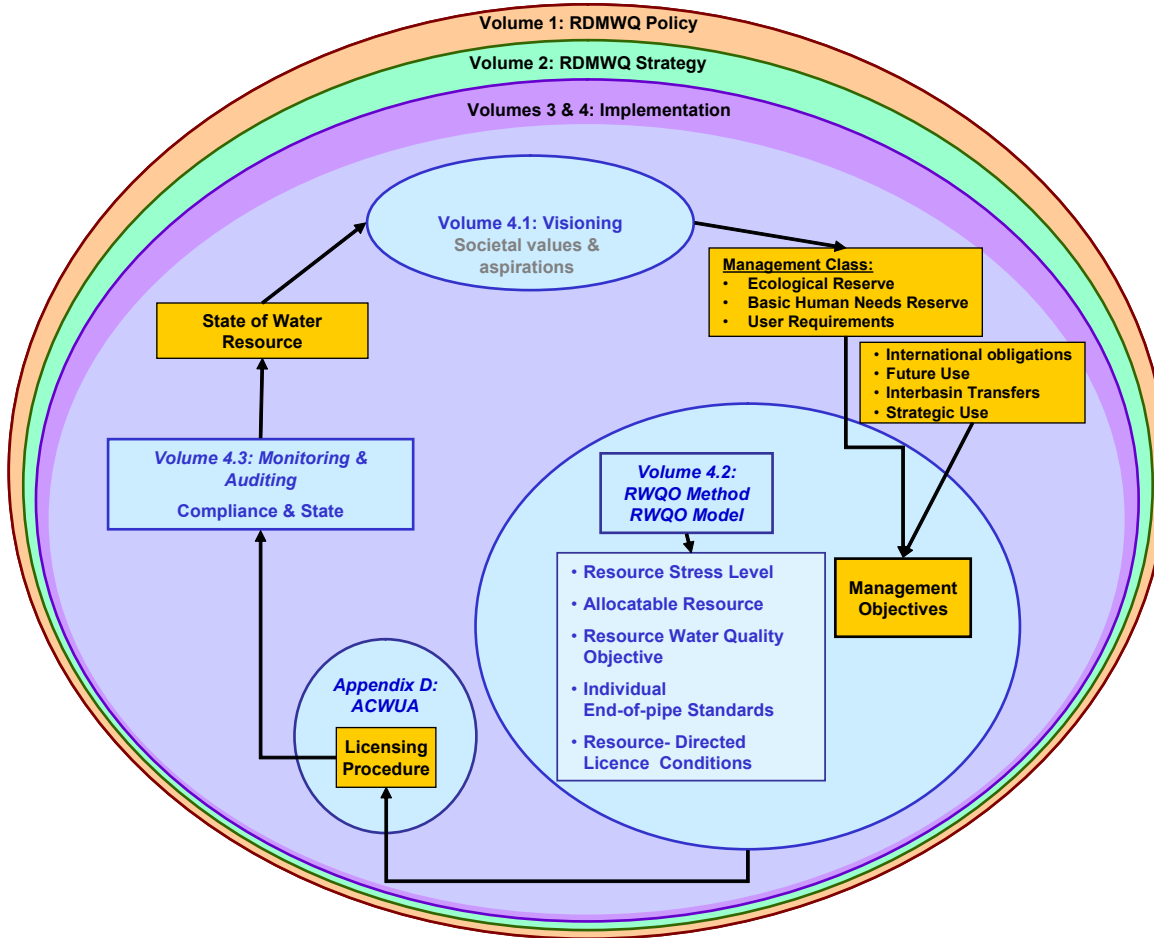


Figure 1: Iterative RDWQM framework for making RDM operational in licensing

Appendix C: Guidelines for Setting Licence Conditions

The guideline on setting licence conditions for RDMWQ explores the rationale of setting specific licence conditions and suggests pro-forma licence conditions for RDMWQ.

Appendix D: ACWUA - Decision Support System

A decision support instrument (software program), "Assessment of Considerations for Water Use Allocation" (ACWUA), has been developed to allow multiple criteria decision analysis, which utilises indicators to inform decisions on licence allocations. ACWUA guides regional authorities, by supporting decision-making despite incomplete, imprecise, and variable information. The decisions are based on criteria such as socio-economic factors, race and gender considerations and alignment with catchments strategy.

Appendix A: Resource Directed Management of Water Quality: Philosophy of Sustainable Development

The Philosophy of Sustainable Development offers an overview of the evolution

of sustainable development and draws it through to water resource management in general, and RDMWQ specifically.

Appendix B: Conceptual Review of water use licence applications

This document explains the two management approaches followed by the Department of Water Affairs and Forestry to implement sustainable water resource use and management.

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