



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA



Development of the National Water Resources Strategy Third Edition (NWRS-3)

Goal 3: Protecting & Restoring Ecological Infrastructure

NWRS-3 CONSULTATION WORKSHOP

Day Month 2022

NWRS-3 CH12: Protecting and Restoring Ecological Infrastructure

The aim of this chapter is:

To ensure that South Africa's aquatic ecosystems are protected to ensure sustainability, and that decisions concerning levels of protection take transparent and just account of environmental, social and economic well-being.

This chapter consists of the following 4 sections:

- Context and Current Challenges
- Guiding Principles
- Baseline and Status Quo
- Strategic Objectives and Strategic Actions for implementation (see next slides)

NWRS-3 CH12: Context & Current Challenges

Background:

- Healthy ecosystems provide goods and services
- NWA, Chapter 3, prescribes the protection of the water resources through Resource Directed Measures (RDM)
- These are measures which, together, are intended to ensure the protection of the water resource as well as measures for pollution prevention

Goods and Services by well functioning ecosystems:

- such as water quality improvement,
- streamflow regulation and flood attenuation,
- deliver a valuable cultural service to people,
- buffer human settlements and built infrastructure against extreme events that are likely with climate change,
- playing a crucial and cost-effective role in disaster-risk reduction.

Threats to ecosystems:

- climate change,
- population growth,
- over utilization of the water resource,
- poor land-use practices and
- Pollution from wastewater treatment works has become a major concern in South Africa as most wastewater treatment works are overloaded and ill-operated. (microbiological, chemical)

NWRS-3 CH12: Context & Current Challenges

Climate change impacts:

- present new challenges in the future,
- higher temperatures,
- altered rainfall patterns,
- and more frequent or intense extreme events
- affect where and what types of plants and animals can survive the quality of their habitats and their abundance.
- The rate and scale of change will affect different species in different ways as they try to adapt to changing habitats,
- irreversible changes of habitat and species.

Climate change adaptation:

- reducing the stresses imposed on the water resource through abstraction and discharges,
- by clearing alien vegetation, and
- by restoring and improving habitats where damage is caused by use.
- By protecting water resources, a system that is more resilient to the impact of climate change, such as floods and droughts will be ensured.

NWRS-3 CH12: Guiding Principles

No. of PRINCIPLES	DESCRIPTION	KEY COMPONENTS
Principle 1	Protection of the water resource through Resource Directed Measures (RDM) and Source Directed Measures (SDM)	The implementation of the water resource classes and to set Resource Quality Objectives (RQOs) over the next five years
Principle 2	Water resource protection based on a participatory approach,	Involving users, planners and policymakers at all levels
Principle 3	The value of water resources must consider an economic, social and environmental benefits of the resource:	Water Pricing Strategy: cost of water and value of water converge

NWRS-3 CH12: Guiding Principles

No. of PRINCIPLES	DESCRIPTION	KEY COMPONENTS
Principle 4	Measures set for protecting resources	<ul style="list-style-type: none">✓ RDM = setting goals to balance the need to protect, sustain and use water resources in relation to the:<ul style="list-style-type: none">▪ quantity,▪ quality,▪ Habitat, and▪ Biota ✓ SDC = setting controls to prevent water quality pollution and degradation.

NWRS-3 CH12: Guiding Principles

No. of PRINCIPLES	DESCRIPTION	KEY COMPONENTS
Principle 5	Incentive based protection of the water resources	Waste Discharge Charge System (WDCS), an instrument to improve the quality of the degraded rivers, estuaries, wetlands and aquifers.
Principle 6	Integrated protection of aquatic ecosystems	Water resources to be managed in an integrated manner.
Principle 7	Increasing the economic value of sanitation	Recognition of the economic value of sanitation = 'polluter pays' OR 'user pays'
Principle 8	Recognising the scarcity of quality water: the good	Sanitation services to consider sustainability of water resource and economic growth.

NWRS-3 CH12: Baseline and Status Quo

Progress

- the development of the water resource classification system,
- the development and progressive implementation of Resource Directed Measures;
- development of a Pricing Strategy that will provide incentive based resource protection;
- implementation of wastewater risk abatement plans, such as the Green Drop certification for municipal wastewater treatment works to minimise pollution of the environment,
- development of programmes to monitor and manage ecosystem health
- the development of National Freshwater Ecosystem Priority Areas,
- protection of riparian and wetland buffers and critical groundwater recharge areas,
- Identification and the rehabilitation of strategic water ecosystems (Working for Water programme in DWS, the Natural Resource Management programmes of DEFF and Land Care in DALRRD)
- The Green Drop certification, a part of the Wastewater Risk Abatement Plan, has been implemented

Challenges:

- implementing the policies and programmes for water resource protection in a cost effective and sustainable manner within a reasonable time frame.
- monitoring of ecosystem health to proactively minimise degradation of the resource,
- focus rehabilitation efforts and ensure compliance to sustainability.

CH12 Strategic Objective 1:

To ensure sustainable management of water resources through Resource Directed Measures (RDM) and Source Directed Controls (SDC).

- Determine Resource Quality Objectives, Classes and Reserve for all significant water resources.
- Monitor all water resources, wetlands and buffer zones for compliance with RQOs and align these with EFR, other networks, DFFE Coastal Management and SDGs 13, 14 and 15 to minimize costs.
- Implement the RDM (the Water Resource Classification, Reserve and RQOs) in the four main stem rivers of the Berg, Breede and Gouritz, Middle and upper Vaal WMA's).
- Develop SDC strategies and guidelines for protection, remediation and rehabilitation (DWS has already initiated the development of the National Eutrophication Management Strategy and the Rehabilitation Management Guidelines of water resources in SA, as a way of giving effect to this Strategic Objective.
- Review the Resource Directed Measures methodology as it relates to groundwater in terms of the National Groundwater Strategy due to the unique hydrogeological characteristics and vulnerability of groundwater systems.
- Include climate change scenario projections in ecological reserve determination monitoring and studies.

CH12 Strategic Objective 2:

To protect and maintain freshwater ecosystems priority areas in good condition.

In order to achieve the above strategic objective the following strategic actions must be undertaken:

- Implement the National Wetland Monitoring Programme (NWMP).
- Monitor extent of wetlands, estuaries, lakes, dams, and rivers (SDG 6.6.1.a).
- Monitor quantity of water in rivers, lakes, dams, estuaries and groundwater (SDG 6.6.1.b).
- Monitor quality of water in rivers, lakes, dams, estuaries and groundwater (SDG 6.6.1.c.).
- Monitor ecosystem health of wetlands, lakes, dams, estuaries and rivers (SDG 6.6.1.d).
- Review and promulgate aggressive restrictions within the legislation to restore and protect ecological infrastructure.

CH12 Strategic Objective 3:

To rehabilitate and protect ecological infrastructure, including Strategic Water Source areas.

- Declare strategic water source areas, critical groundwater recharge areas and aquatic ecosystems that are recognised as threatened or sensitive as protected areas.
- Develop and maintain approaches for proactive protection of groundwater resources
- Establish innovative ways for collective action through taking a stewardship approach to improve strategic water source areas.
- Monitor the impact of alien invasive plants in water security, and ensure their removal from Strategic Water Resource Areas and riparian / buffer zones.
- Identify and use legal mechanisms to protect strategic water source areas.
- Invest in strategic water source areas and ecological restoration to maintain healthy ecosystems that deliver benefits (i.e. entrepreneurial opportunities in the blue-green zero waste economy).
- Identify and rehabilitate priority degraded water ecosystems, the rehabilitation of which is necessary to achieve strategic objectives including Resource Quality Objectives.
- Protect sensitive areas, protected areas, nature reserves and national parks.
- Establish dedicated rehabilitation plans for rivers and DWS infrastructure like dams and weirs where there is no hydrological and ecological connectivity.
- Compile a data base for all sand mine activities and rehabilitate past impacts.
- Create large scale constructed wetlands to assist with water purification.
- Include AMD treatment for all coal mines.
- Set up dedicated river management plans.

CH12 Strategic Objective 4:

To prevent pollution of water resources from point and non-point source pollution by managing at source.

In order to achieve the above strategic objective the following strategic actions must be undertaken:

- Secure funds for restoration and ongoing maintenance of ecological infrastructure through operationalising the water pricing strategy.
- Develop and implement technologically based monitoring embracing 4IR.
- Implement the “polluter pays” principle.
- Undertake Green Drop Auditing.
- Ensure reduction and removal of pollutants at source.
- Ensure law enforcement and compliance of discharge standards by water sector institutions.
- Exclude mining activities from watercourses and water resources via the establishment of a scientific buffer.

CH12 Strategic Objective 5:

To create awareness among communities, business and decision makers about the value of water and ensure commitment to sustainable water use practices.

In order to achieve the above strategic objective, the following strategic actions must be undertaken:

- Conduct community education and awareness campaigns in every catchment as part of the work undertaken by community development officers in CMAs (e.g. implement an Adopt-a-River programme or a Citizen Science programme working with other stakeholders).
- Provide information on the ecological state of water ecosystems.

CH12 Strategic Objective 6:

To monitor the ecological health of our water resources through an integrated information management system.

In order to achieve the above strategic objective the following strategic actions must be undertaken:

- Fund, develop and implement a database to capture and manage data generated from the River Ecosystem Monitoring Programme (REMP) and the National Wetland Monitoring Programme (NWMP).
- Monitoring rates of change in ecological state through implementation of the NWMP.

Discussion and Inputs

Chapters 12