



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA



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

Enabling Chapter: Data Collection, Analysis and Information Management for effective Monitoring, Evaluation and Reporting

CONSULTATION WORKSHOP

22 August 2022

Data Collection, Analysis and Information Management for effective Monitoring, Evaluating and Reporting

The aim of this chapter is:

- To establish national monitoring systems on water resources (NWA chapter 14; clause 137(1)) and
- To ensure that there is a national information system on water and sanitation services (WSA chapter 10; clause 67(1)).

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

Context & Current Challenges

Both the NWA / WSA place the duty on the Minister to:

- Establish national monitoring systems
- Establish information systems linked to the national monitoring systems

Purpose of national information systems

Record / Store, provide data and information for:

- Protection, sustainable use, management
- Development, implementation monitoring of the NWRS / policy
- Water and sanitation management institutions, users and the public for
 - Research and development;
 - Planning and environment impact assessments;
 - Public safety and disaster management
 - Status of water resources.
- Monitor performance of institutions
- Any other lawful reason



Context & Current Challenges

Water and sanitation refers to:

- any stage of the water and sanitation life cycle,

water and sanitation information refer to:

- data or value-added information products that relate to:
 - Occurrence
 - Spatial and temporal distribution
 - Quality
 - Quantity
 - Movement
 - Use (actual, authorised or registered)
 - Compliance to management and transformation objectives
 - Cost of surface and groundwater and sanitation etc.
 - Metadata related to these.

Responsibility for monitoring with the DWS

- DWS Minister has a limited legislative mandate to regulate data uploaded into national information system/s.
- Standards regulating the verification of data should be put in place,
- Mechanisms to ensure credibility of data uploaded.

Goal and Guiding Principles

Goal is to provide information needed:

- Planning
- Decision making
- Operational water and sanitation management and related infrastructure
- at local, regional and national levels.

The primary principles summarised as follows:

- Provide complete, accurate, current information
- Integrated, accessible monitoring and information management system critical
- Data collected, managed and protected as a strategic asset.
- Recording of observations on all elements of the entire value chain is essential.
- Effective use / exchange of data requires compliance with universal standards / best practice
- Data management - decentralised, participatory and multi-sectoral environment requires effective governance
- Accessible to all
- Ensure adequate skilled resources
- Ensure adequate and reliable funding
- Collaboration with Provinces, institutions and users to provide information to national information system.

Baseline and Status Quo

Optimisation project -

- reviewed existing major national water and sanitation monitoring programmes.
- identified need to expand the current coverage of monitoring networks where it is inadequate.

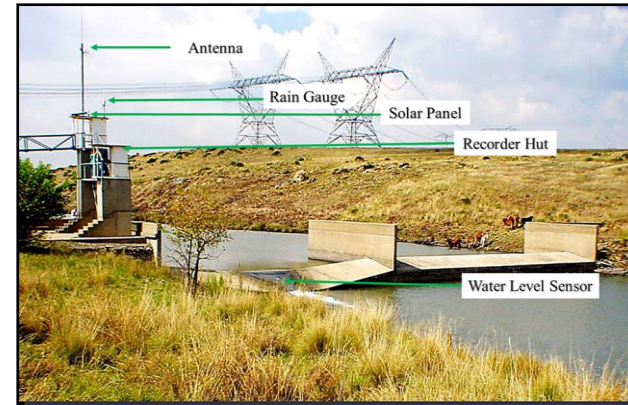
Gaps exist with regards to water accounting on how water supply is balancing growing demand including transformational imperatives.

Data Management Strategy for Water and Sanitation has been developed and was approved in 2019 and is currently being implemented.

The main pillars for data acquisition and management are:

- Data Governance.
- Data Life Cycle Management.
- Data Management Systems.
- Collaboration with institutions in the Water and Sanitation sectors.

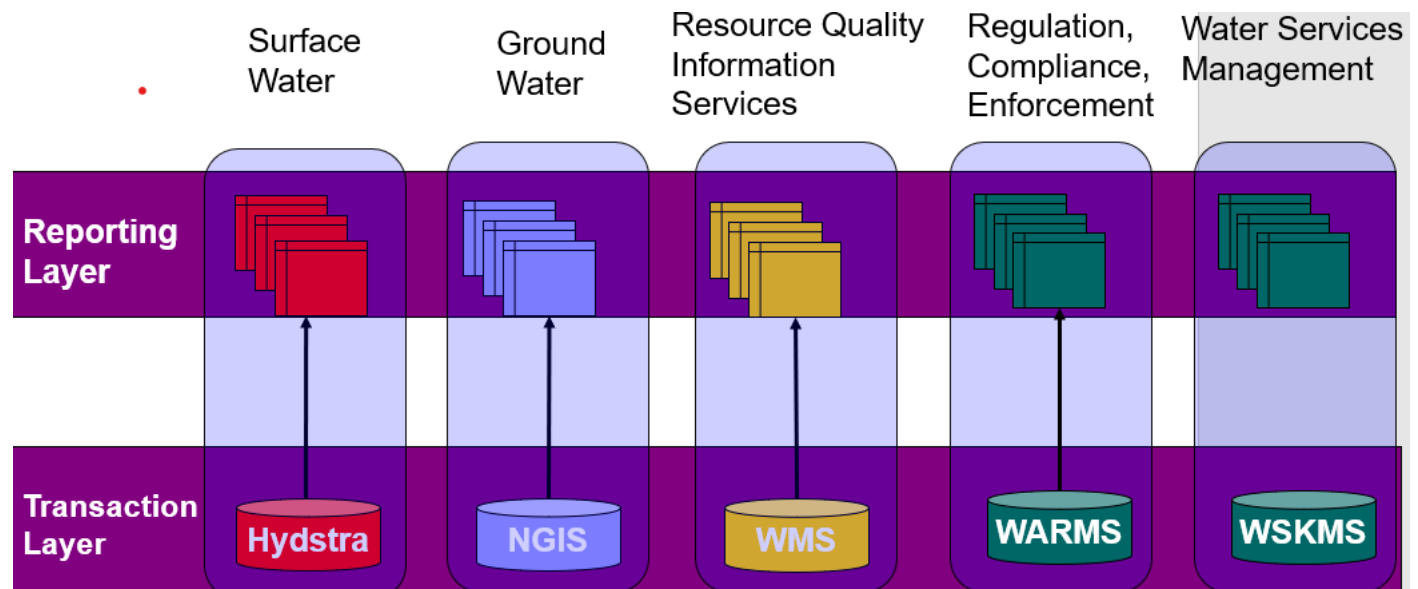
DMS should be used as a guideline and reference for other strategies



Baseline and Status Quo

Challenges

- Rigid formats of information leads to limited data analysis and projection ability
- Fragmentation / accessibility causes lack of a single consistent view – delays in decision making
- Lack of data sharing between stakeholders - duplications / redundancies.
- Many separate water and sanitation information systems, both within and outside the DWS, which function as standalone systems with limited accessibility – integration is slow
- Data-driven vs information-driven systems



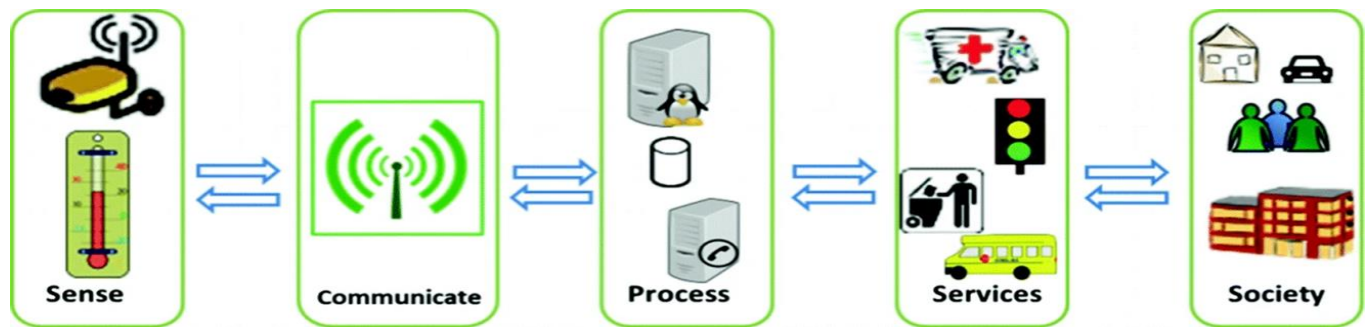
Strategic Objectives and Strategic Actions

Strategic Objective 1

To develop and maintain water and sanitation information systems and hydrological monitoring networks.

Actions required:

- Management, Monitoring, Evaluation and Reporting Structures in place.
- Review and develop DWS information management strategy to include:
 - ✓ Amended authorisation conditions to provide for self-reporting.
 - ✓ Harmonization of monitoring actions by all responsible institutions.
 - ✓ Performance information of V&V audits.
- Align monitoring institutions to support National, Continental and International reporting programmes,
- Establish monitoring networks and programmes relating to all emerging requirements,
- Grow and maintain the groundwater resource knowledge base, focusing on the resource itself, its socio-economic role and its appropriate management.
- Ensure the digitisation and integration of all monitoring networks and information systems across the entire water and sanitation value chain.



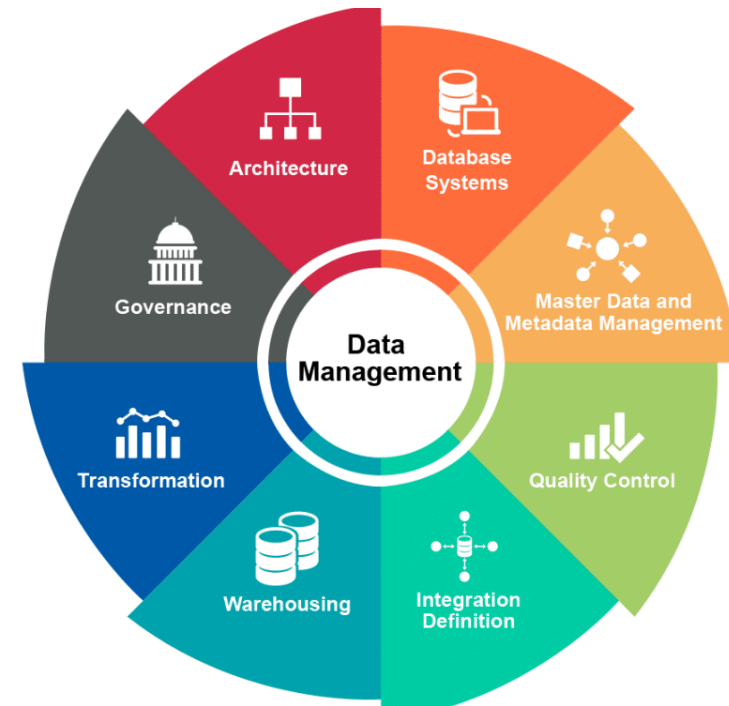
Strategic Objectives and Strategic Actions

Strategic Objective 2

To implement data management so as to collect, analyse, compile, maintain, disseminate and provide easy access to accurate, complete, up to date and relevant data.

Actions required:

- Data Management Strategy implementation.
- Capture, maintain, analyse and disseminate accurate, up to date and relevant information.
- Provide up to date and relevant data and intelligence to the water and sanitation sector and the public.
- Ensure information is accessible to all



Strategic Objectives and Strategic Actions

Strategic Objective 3

To support decision-making, reduce and manage risks and deal with emerging climate change impacts.

Actions required:

- Establish a hydrological extremes and risks management operational programme.
- Monitor for compliance.
- Monitor for outcomes.
- Monitor for impact and collaborate and share data



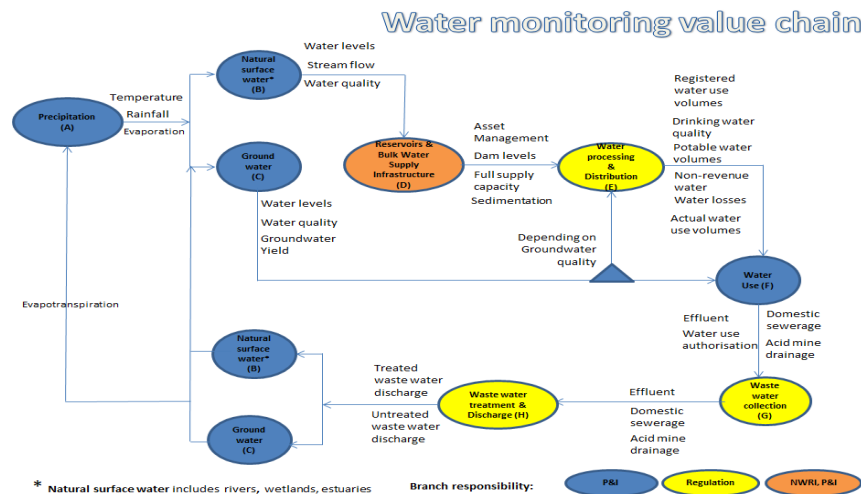
Strategic Objectives and Strategic Actions

Strategic Objective 4

To raise awareness of the importance of investing in the collection and management of high-quality water and sanitation related information.

Actions required:

- Ensure accessibility of data and information on water availability, water quality and water quantity within the water and sanitation sector.
- Share information on sector successes and achievements.
- Implement a co-ordination and liaison programme.



Strategic Objectives and Strategic Actions

Strategic Objective 5

To improve governance of monitoring and information management in the water and sanitation sector.

Actions required:

- Form partnerships and inter-governmental cooperation agreements for data and information sharing.
- Integrated Water Monitoring Committees and sub-committees operational.
- Ensure coordination and collaboration at local, provincial, national and international levels.
- Develop and implement standardized guidelines / SOPs, best practices for integrated monitoring.



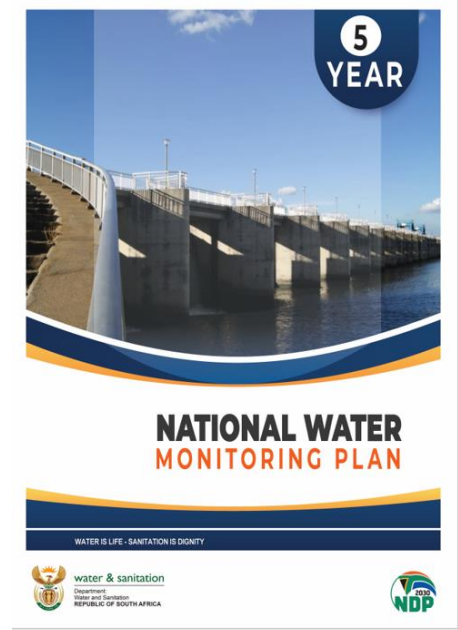
Strategic Objectives and Strategic Actions

Strategic Objective 6

To develop and implement a water and sanitation monitoring plan at national, regional and local levels and ensure uninterrupted continuation of existing monitoring and assessment programmes

Actions required

- Establish partnerships and inter-governmental cooperation agreements on data collection and information sharing.
- Ensure integrated monitoring governance and monitoring committees are optimally operational
- Monitor and assess for compliance.
- Monitor for outcomes.
- Monitor and assess for impact.



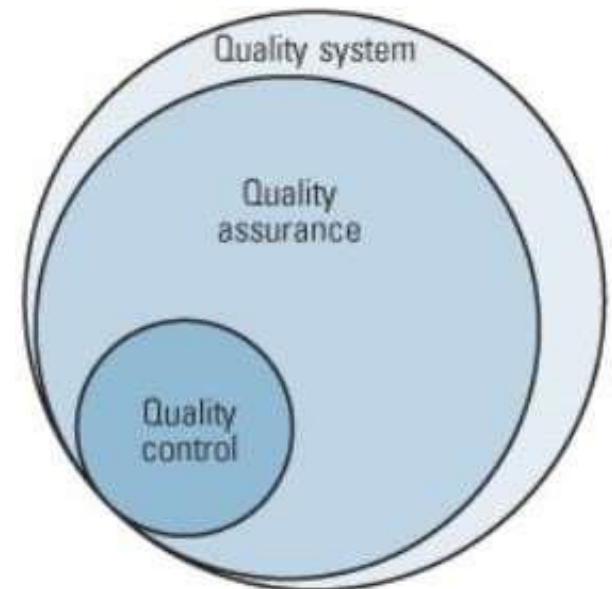
Strategic Objectives and Strategic Actions

Strategic Objective 7

To enhance quality assurance and auditing of data and information on all aspects of water and sanitation.

Actions required:

- Assess and implement international standards such as those used by the World Meteorological Organisation (WMO) for collection and monitoring of information nationally in the water and sanitation sector.
- Establishment of a formal Quality Assurance and Control function, starting with the water quality monitoring programmes with the aim of expanding it to serve all the monitoring programmes.



Discussion and Inputs



Chapters 14