

A STRATEGY FOR MONITORING AND ASSESSMENT TO SUPPORT WATER RESOURCE MANAGEMENT

EXECUTIVE SUMMARY

Rationale

Legislation places the duty on the Minister of Water Affairs and Forestry to establish national monitoring and information systems as soon as is practical to do so. A prerequisite for performing the core functions of water resources management, integrated monitoring and assessment to obtain reliable strategic and operational management information on the nature and status of the resource itself, and other ancillary information, is essential.

The Water Resources Monitoring Assessment and Information System (WRMAIS) project provides a strategy for developing an effective, integrated monitoring and assessment information system.

Process

The proposed strategy was developed through a process of consultation - in the form of interviews, workshops and presentations - with stakeholders representing the core water resources management functions and incorporation of their views and recommendations in the proposed strategy. Those who participated in the process expressed significant buy-in for the proposed strategy.

Analysis

The proposed strategy addressed issues that are considered obstacles to developing an integrated approach. Amongst these issues were the following: -

- Problems with quality of data and information,
- Problems with access to data and information,
- Ineffective corporate governance of monitoring and assessment,
- Commonality between data requirements of different core functions; unique requirements are the exception rather than the rule. Data analysis and information requirements, however, may be quite specific.
- Major shortage in skilled people needed to develop, maintain, and support monitoring and assessment systems

Proposed strategy

A key recommendation of the strategy is that DWAF should combine all the existing and new water resources monitoring and assessment sub-systems into a coherent Water Resources Monitoring and Assessment Information System (WRMAIS) backed by a strong level of governance both within and external to DWAF

The main features of the WRMAIS would be that:

- it consists of a number of sub-systems which are combined as a coherent portfolio into a corporate WRMAIS.
- Each sub-system contains three key functional components, namely:
 - data collection, which can occur within DWAF or in another organisation,
 - data storage, maintenance and dissemination, and
 - information generation, reporting, and delivery.
- It is envisaged that there will be significant sharing of logistics and infrastructure, particularly with respect to the data collection and data storage components and that there will be adherence to common guidelines and standards.

There are four conditions necessary to establish the proposed WRMAIS.

- It should be established and managed as a corporate system within DWAF and a co-operative system with other organisations.
- The sub-systems will be selected on the basis of business analysis of the core functions of water resources management required by the Act.

- Effective interfaces with clients of the proposed WRMAIS must exist. Strategic interfaces would typically address policy on the establishment and use of the WRMAIS; agreements with local and international external organisations, agreements with the Chief Information Officer (CIO) on the required IT infrastructure and service levels, etc. Operational interfaces would be handled at the level of individual sub-systems.
- The WRMAIS must be supported by a stable, reliable IT platform and supporting IT infrastructure which is the function of the Department's Chief Information Officer (CIO) supported by the IT Integrator.

Full documentation regarding the strategy is available on the DWAF web site: <http://www-dwaf.pwv.gov.za/iwqs/>

Benefits of the strategy

Implementation of the strategy will provide an essential framework for the provision of water resources information. A well-structured approach to monitoring and assessment for all information related to water will ensure DWAF assumes a leadership role in providing direction for future water resources information development and decision support.

A number of benefits can be expected to accrue through the WRMAIS. Amongst these are the following:

- Increased use of reliable water resources information will
 - facilitate the understanding of water resources issues in the general public,
 - empower stakeholders by providing equal access to pertinent data, and
 - identify and correct data quality problems, thereby improving the data and reducing the potential for conflict concerning the quality and validity of particular data sets or information.
- Standards will apply that make data exchange more consistent, thus ensuring easier access to more data and inter-operability between systems.
- Provision of pertinent primary data, analysed information, models and other tools to perform analysis.
- Limited resources will be optimally used, duplication of effort will be reduced and gaps will be identified and filled.
- Financial benefits will accrue through more efficient and effective collection of primary data
- WRMAIS will allow for increased integration in decision making and in assessment of water resources quality, facilitating an improvement in water resources management decisions and the promotion of more sustainable, beneficial water use.

This unique opportunity to meet the challenges for integrated and effective monitoring and assessment systems will not recur. Failure to act soon will result in the continued proliferation of disparate information systems and the lack of a comprehensive approach in providing water resources information.

The way forward

A project will be set up to develop an implementation plan to make the strategy a progressive reality. A master plan, budget estimates and formal mechanisms to co-ordinate and collaborate with external stakeholders will be determined

A critical requirement is to establish effective interfaces with three other strategic initiatives in DWAF, namely the IT governance initiative, the restructuring of the Department's water resources management functions and the development of the National Water Resources Strategy.

A probable time line for completing the establishment of the WRMAIS indicates that the full system can be operational by April 2004. However, significant interim results would be achieved during that period as individual sub-systems are developed and/or migrated to the WRMAIS.