March 2015
The WRC operates in terms of the Water Research Act (Act 34 of 1971) and its mandate is to support water research and development as well as the building of a sustainable water research capacity in South Africa.

TECHNICAL BRIEF

IWRM

IWRM: From theory to practice

A completed Water Research Commission (WRC) project interrogated integrated water resource management (IWRM) as a feasible approach to water management, particularly the translation from theory to practice.

Background

This WRC project interrogated the narratives about the transfer of IWRM theory to IWRM practice, about the shift from policy to outcomes. Specifically, the research investigated the concept of IWRM, whether IWRM can be implemented; the nature of the regulatory environment for water management and whether the regulatory environment in South Africa is enabling or disabling for implementing IWRM.

Lastly, the post-1994 water policy in the Olifants-Doorn water management area (WMA) was studied as an example of IWRM implementation.

Defining IWRM

Analysis of Chapter 18 of Agenda 21 as well as analysis of the definitions from a small selection of articles from the IWRM literature seems to suggest that the key issues and thus the key concepts of IWRM are access and sustainability. Integrated water resource management is therefore defined as simultaneously achieving two seemingly contradictory objectives of providing access to and ensuring sustainability of water resources.

By achieving the twin objectives of access and sustainability through IWRM it is hoped that there will be a significant movement in the quality of life of especially the marginalised and vulnerable groups in society.

Despite having access to water, many communities and households remain vulnerable to the consequences of water scarcity. Because of the persistence of vulnerability there are expectations that IWRM will translate into increased equity, reduced vulnerability and enhanced resilience, succeeding where in the past traditional water resource management has failed. To achieve IWRM water users should focus their activities on resource protection, appropriate land use, optimal water use and governance.

Attempting to implement the impossible

By the year 2000 IWRM appeared to have been generally accepted internationally by stakeholders in the water sector as the preferred approach to water resource management. Doubts about its utility, persistently high numbers of people without access to safe drinking water or decent sanitation and continuous reports of degradation in the quality of water resources in those countries that embraced the IWRM philosophy, lend credence to the increasing discourse on the failing of IWRM of being the solution to the water management problems.

While the pro-IWRM narrative was growing at the international, regional and national levels there was also a growing narrative that it is impossible to implement IWRM.

The two questions raised over this contradiction are:
Is integrated water resource management as an approach to water resource management not being implemented because of being inherently impossible to implement?
Are there other reasons (lack of funding, inadequate human capacity, for example) for IWRM seemingly not being implemented?

Regulatory framework

The post-1994 government of South Africa embarked on the development of an operational environment for water management that addresses the issues of both water services (access) and water quality (sustainability). The operational environment of any organisation is shaped by three factors, namely rules, capabilities and ethos.

Rules refer to policies, laws and regulations of society that govern the actions of people. For the purposes of this research four indicators are recognised in relation to rules: political rules, operational rules, credibility of rules and enforcement of rules.

Capabilities refer to the combination of resources that allows an organisation to function. There are five resource types: human resources, financial resources, capacity building, appropriate technologies and good corporate governance.

Ethos refers to the informal rules that operate in organisations and which often determine the manner in which people in organisations behave. There are two indicators under ethos: culture and enforcement of culture.

Together the above provide a set of indicators that allow us to understand the contribution of rules and regulations, resource availability and the behaviour of its people on the functioning of an organisation, i.e. whether the operational environment is enabling or disabling.

Legislation is one determinant of whether an operational environment is enabling or disabling. The focus of the Water Services Act is on providing access to water whereas the focus of the National Water Act is on ensuring sustainability.

When looking at these two Acts in combination the access-sustainability linkage is clearly observed. One could thus argue that the conditions for integration have been met and that the policy and regulatory environment is thus enabling to achieve the integration in water resource management.

But the evidence for the access-sustainability link is much stronger than between the Acts in combination. The Water Services Act speaks to the access and also emphasises sustainability whereas the National Water Act speaks to sustainability and also emphasises access.

IWRM and the Olifants-Doorn WMA

The Olifants-Doorn WMA was used as a case study to assess the implementation of IWRM. Access to water is more than access to water for basic human needs. It also means access to water for productive purposes, access to the economic opportunities afforded by water, and access to water for cultural needs.

Based on data supplied, in the two municipalities (Matzikama and Cederberg) that fall wholly in the boundaries of the Olifants-Doorn WMA, 96.4% of people in the case of the former and 97.7% in the case of the latter have access to water for human consumption.

In the Olifants-Doorn WMA access to water for productive purposes is primarily water for agriculture, with small amounts to industry (wine cellars) and mining (Namakwa Sands). Access to productive water to emerging farmers has been provided through a project jointly funded by the Department of Water and Sanitation and the Danish International Development Agency.

Assessing the implementation of IWRM in the Olifants-Doorn WMA the following pertaining to access emerges: providing access to water for basic human needs and productive purposes is generally achieved as is providing access to the economic opportunities provided by water.

In terms of sustainability, the water resources in the WMA have been classified and the Reserve has been determined. Although the resource quality objectives (RQOs) had not yet been determined at the time of this study indications of what RQOs could be are included in the Reserve determinations as well as in the report on the classification process.

In short, all the elements required by the National Water Act to ensure sustainability of the water resources in the WMA are in place. However, no evidence has been found of a systematic implementation of the recommendations contained in the State of the Rivers Report, or the Reserve determinations that were used in the water-licensing process in the WMA since 2006, or that mechanisms to monitor flow and quality have been put in place.

This indicates that the progress in identifying the nature and extent of the resource protection measures that is required, is not matched by progress in action to implement the protection measures.

Conclusion

The project set out to gain an understanding of whether IWRM is implementable and if it is, how one moves from theory to practice or from policy to outcomes.

What are the factors that facilitate or constrain the implementation of IWRM? Since 1994, water resource management in South Africa has undergone a major transformation, and tracing the evolution of IWRM in South Africa, indications are that the Department has mostly got it right.

Measured on the policy-outcome-continuum of constitutional imperatives-policy-legislation-regulations-strategies-plans-methodologies-capabilties-ethos-implementation-outcomes, the dearth of positives outcomes seems to be mostly laid at the door of the ethos in the department. Most of the data indicate that there is a hesitancy to implement, a fear of making a mistake.

This conclusion seems to be supported by anecdotal evidence and by the views of ex-employees of the department.

Further reading:
To order the report, ***Integrated water resource management (IWRM): From theory to practice, from policy to outcomes*** (**Report No. 1975/1/14**) contact Publications at Tel: (012) 330-0340, Email: orders@wrc.org.za or Visit: www.wrc.org.za to download a free copy.