

# Integrated water resources management: The theory–praxis–nexus, a South African perspective

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## Abstract

Integrated Water Resources Management (IWRM) has been accepted as the water management regime for the 21st century. Despite extensive publications on IWRM as well as the establishment of the necessary enabling environment, implementation remains elusive. Through an analysis of documents of the Department of Water Affairs and Forestry (DWAF) in South Africa (policies, legislation, reports, media releases and the 2007 Budget Vote) and the literature on IWRM, it is concluded that notwithstanding many IWRM related activities, DWAF has moved from broadly IWRM to primarily domestic supply and sanitation. This is possible because of a lack of conceptual clarity of IWRM. A conceptualisation of IWRM that will facilitate the implementation of IWRM is presented.

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## 1. Introduction

It has generally been recognised that South Africa is one of the countries at the forefront of adopting Integrated Water Resources Management (IWRM) as its water management regime. The country, through the Department of Water Affairs and Forestry (DWAF), used the opportunity afforded by the political transition in the mid-nineties to transform the water sector. A set of water law principles was adopted in 1996 (Department of Water Affairs and Forestry, 1997), a new water policy was launched in 1997 (Department of Water Affairs and Forestry, 1997) and the new water act was promulgated in 1998 (Republic of South Africa, 1998). IWRM ostensibly formed the basis of this transformation. Ten years later in 2006 it seems appropriate to ask in what ways have DWAF progressed in the implementation of integrated water resources management.

The definition of the Global Water Partnership (GWP) of IWRM (Global Water Partnership, 2000) as “a process

which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems”, is regarded by Snellen and Schrevel (2004) as the “first authoritative” definition of IWRM. Despite this conceptualisation, implementation of IWRM has been elusive. Possible reasons put forward for the difficulty of implementing IWRM are a lack of human capacity in the water sector, lack of funding (Swatuk, 2005) and the unwillingness of policy makers to embrace the integration imperative (Allan, 2003; Swatuk, 2005). Another reason could be that the conceptual basis of IWRM is not clear and that the GWP definition does not provide the theoretical clarity required to practitioners for successful implementation (Jonker, 2004).

This article describes the conceptualisation of IWRM in official government documents, examines the perceived failure of implementing IWRM in South Africa, teases out the conceptual shortcomings seen as inhibiting implementation and finally presents a framework that might assist water managers to manage water in an IWRM compatible manner.

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## 2. Methodology

Data for this study is drawn from DWAF documents (policy, legislation, reports, media releases and the 2007 budget vote) as well as from the extensive literature on IWRM.

## 3. IWRM in DWAF documentation

In the run-up to the drafting of the new water act, a set of 28 “principles and objectives” for a new water law was accepted. These principles included formulations such as “All water shall have a consistent status in law, irrespective of where it occurs”, and is a clear indication that all water, surface as well as groundwater will be dealt with in a same fashion. The principles refer to the unity of the water cycle. Furthermore, the “right” of the environment to water is specifically mentioned in principle 10 which reads: “The water required to meet the basic human needs and the needs of the environment shall enjoy priority use by right. The use of water for all other purposes shall be subject to authorization” (Department of Water Affairs and Forestry, 1997).

This IWRM discourse is elaborated upon in the White Paper on a National Water Policy for South Africa (Department of Water Affairs and Forestry, 1997). The policy document starts by describing the legal, social and economic context of South Africa at that time as well as placing water resources management in the broader international water policy context. It then continues and spells out equitable access to water, the benefits from water use, resource protection and environmental sustainability as the objectives of the water policy. Although the concept integrated water resources management does not appear in the policy document, the description of the policy gives a powerful impression of IWRM. The White Paper spells out the approach to water management as follows:

“New approaches to water management will be needed. These will have to focus on the way in which water is used in each user sector rather than simply on predicting, planning and supplying its water needs”, and “This focus on individual sectors requires a framework for intervention which, without trespassing on the underlying autonomy of the user sector, guides its water related activities towards an optimum and sustainable path and promotes a spirit of resource conservation” (Department of Water Affairs and Forestry, 1997, p. 20).

The Water Act of 1998 (Republic of South Africa, 1998) also does not contain the words integrated water resources management, but it does entrench the principles, aims, objectives and processes as set out in the white paper. As is the case with these types of documents, Section 1 defines terms. It is the sequencing of the next couple of sections in the act that indicates how serious DWAF was about implementing IWRM. Section 2 commands the Minister to develop a national water resource strategy that will “pro-

vide the framework for the protection, use, development, conservation, management and control of water resources for the country as a whole”. The Act demands that water resources be managed consistently across the whole country and in all areas. Section 3 asserts the responsibility of the water management institutions to develop a catchment management strategy that is consistent with the national water resource strategy and this is applicable at the catchment level. In Section 4 a number of measures are prescribed that is aimed at ensuring that comprehensive protection of the water resource.

The evolution of IWRM as a concept in South Africa climaxed with the release of the National Water Resource Strategy. For the first time in an official document in South Africa the words integrated water resources management are used. IWRM is defined in the National Water Resource Strategy as “a process which promotes the co-ordinated development and management of water, land and related resources in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems” (Department of Water Affairs and Forestry, 2004, p. 13). Not only does the National Water Resource Strategy establish the use of the concept IWRM in a Department of Water Affairs and Forestry document and define IWRM, it also is an IWRM plan, albeit not called an IWRM plan.

## 4. The water resource management discourse in South Africa

In the beginning of 2006, DWAF convened a series of Provincial Water Summits “to discuss, reflect, confirm, plan and review water related matters that affect the effective, efficient and equitable provision of water from a regional perspective” (Department of Water Affairs and Forestry, 2006a, p. 11). The critical issues raised at these provincial summits were classified into four categories, namely those related to water resources management, protection and use; those related to water services planning and delivery; those related to coordination within the water sector and those referred to as other pertinent issues.

Under the category water resources management, protection and use, seven issues were raised, four relating to domestic water, two about the establishment of water management institutions and one about reallocating water to resource poor farmers.

The water allocation reform (WAR) programme of DWAF (Department of Water Affairs and Forestry, 2005) is aimed at promoting “the beneficial use of water in the public interest” (p. 5), where beneficial use means “a broad range of uses of water across variety of sectors to support a diverse, robust and stable economy” (p. 5). Notwithstanding this broad definition of beneficial use, the summit reports reduces the water allocation reform process to finding water for black farmers who were excluded from agriculture during apartheid. Motivating water allocation reform in terms of providing water to resource poor farmers, limits this water management activ-

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