

Assessing urban water sustainability in South Africa – not just performance measurement

K Carden* and NP Armitage

Department of Civil Engineering, University of Cape Town, Private Bag X3, Rondebosch 7700, South Africa

ABSTRACT

Urban water management – and the impacts that rapid population growth, industrialisation and climate change are having on it – is gaining increasing attention worldwide. In South Africa (SA), cities are under pressure to respond to not only the challenges of water availability and quality, but also to economic transformation and social division. New solutions for improving the sustainability of cities need to be found, including the development of tools to guide decision-makers. Several benchmarking initiatives have been implemented in the SA water sector – mostly in terms of performance measurement of specific water services for regulatory purposes – but none provide an integrated analysis to enable a deeper understanding of sustainability. The research described in this paper was thus focused on using a systems approach to create an understanding of, and measure the potential for, sustainability in a South African urban water context. This has been achieved through the development and evaluation of a composite index, the Sustainability Index for Integrated Urban Water Management (SIUWM). The first step involved compiling a vision of sustainability for the SA water sector, and expanding it into a sustainability framework to help identify suitable indicators for the assessment process, as well as those which link with existing measurement initiatives. Key performance indicator results from the Department of Water Affairs' Regulatory Performance Management System (RPMS) and the Blue Drop / Green Drop schemes were used as partial input to the SIUWM, and scores were computed for the nine member cities of the South African Cities Network (SACN). The SIUWM links the results from the regulatory systems with a broader sustainability assessment process to provide a more detailed analysis which can be used to establish goals and inform strategic processes to leverage support for improved water services. In this way, the connections that link the different aspects of urban water management can be used to generate a greater awareness of the underlying issues by key decision makers and thus guide appropriate action.

Keywords: urban water management; sustainability index; performance measurement

INTRODUCTION

Urban water management issues – and the impacts that rapid population growth, industrialisation and climate change are having on water resources and the environmental capabilities of cities – are gaining increasing attention worldwide. The main challenges in this regard concern: access to services (especially for the urban poor); over-exploitation of water resources; pollution of ground- and surface-water resources; health impacts (from inadequate sanitation facilities and contaminated drinking water supplies); and leakage/wastage of up to 50% in some urban water distribution systems (UNW-DPAC, 2010). It has been suggested that a new paradigm needs to be applied to solve what has been termed 'a growing water crisis' (UNESCO-IHP, 2008), including the development of analytical tools for the assessment of urban water conditions and for the encouragement of integrated urban water management (IUWM) in various settings. An IUWM approach views water supply, drainage and sanitation as components of an integrated physical system (the urban water cycle), whilst recognising that the system resides within an organisational framework as well as in the larger natural landscape (Mitchell, 2006). A key theme of the 2011 Human Development Report (UNDP, 2011) was the need to fully integrate equity concerns into policies at national

and local government level; institutions need to be accountable and inclusive to allow civil society access to information and enable transparent deliberative processes. Coordinated implementation, monitoring, reporting and verification systems are proposed as ways of bringing about long-term accountability to local populations as well as to government partners.

In addition to the challenges of water availability and quality being experienced globally, South African cities are also under pressure to respond to issues of economic transformation and social division. Despite accelerated basic service delivery, many local authorities are battling to keep pace with urbanisation, intensifying competition for scarce resources and raising social tensions. The South African National Water Act (No. 36 of 1998) is seen as one of the most progressive legislative and policy frameworks for water management in the world (Tissington et al., 2008), and is built on the principles of integrated water resources management (IWRM), which emphasises the need for participatory processes at all levels (RSA, 1998). A critical lack of capacity and technical skills has however seriously impacted on national and local authorities' ability to control and manage the water sector. The National Planning Commission of South Africa has recently stated that 'providing high-quality public services is the single most important thing that can be done to overcome the inequalities of apartheid' (RSA, 2011a). Their vision is one of transforming the public service and improving state performance through enhancing institutional capacity by way of a 'polycentric governance' model in which local government will retain responsibility for ensuring adequate service provision in its areas, and regional authorities (assumed to have higher levels of competencies) will provide services in cases where municipalities have

This paper was originally presented at the 2012 Water Institute of Southern Africa (WISA) Biennial Conference, Cape Town, 6–10 May 2012.

* To whom all correspondence should be addressed.

☎ +27 21 650-5317; fax: +27 21 689-7471;

e-mail: Kirsty.Carden@uct.ac.za

<http://dx.doi.org/10.4314/wsa.v39i3.1>

Available on website <http://www.wrc.org.za>

ISSN 0378-4738 (Print) = Water SA Vol. 39 No 3 WISA 2012 Special Edition 2013

ISSN 1816-7950 (On-line) = Water SA Vol. 39 No 3 WISA 2012 Special Edition 2013