

INTRODUCTION

INVESTING IN THE CREATION AND SHARING OF WATER-CENTRED KNOWLEDGE

During 2013/14, the WRC fulfilled its mandate to contribute positively to South Africa's ability to address its water challenges through research and development solutions. The WRC supported the sector with research products aimed at informed decision-making, improving monitoring and assessment tools, and making available a range of new and improved technologies related to water resource management, improved use of water in agriculture and the provision of water and sanitation services. The research portfolio for 2013/14 was set on the basis of the WRC's Strategic Plan. The WRC continued to invest in the creation of knowledge via its four main key strategic areas (KSAs): Water Resource Management, Water-Linked Ecosystems, Water Use and Waste Management, and Water Utilisation in Agriculture. KSA 5: Business Development, Marketing and Communications provides strategic direction to the business development, communication, marketing and branding goals of the WRC, with an emphasis on research uptake and knowledge dissemination.



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Water Resource Management	<ul style="list-style-type: none"> Water resource institutional arrangements Water resource assessment and planning Water quality management Water resource protection Water resources and climate
Water-Linked Ecosystems	<ul style="list-style-type: none"> Ecosystem processes Ecosystem management and utilisation Ecosystem rehabilitation, remediation and restoration Sustainable ecosystem utilisation and development Ecosystems and global change
Water Use and Waste Management	<ul style="list-style-type: none"> Water services – institutional and management issues Water supply and treatment technology Sustainable municipal wastewater and sanitation Sustainable and integrated industrial water management Mine water treatment and management Watersmart fund
Water Utilisation in Agriculture	<ul style="list-style-type: none"> Water utilisation for food and fibre production Water utilisation for fuel-wood and timber production Water utilisation for poverty reduction and wealth creation in agriculture Water resource protection and reclamation in agriculture
Business Development, Marketing and Communications	<ul style="list-style-type: none"> Research – water-centred knowledge Technology transfer and IP management Strategic positioning and partnerships Public relations and communications Business systems management Production and knowledge packaging

Legislative and other mandates

The WRC's annual operational work plan is guided by numerous legislative and other mandates, several of which are in a state of review and revision. The WRC is governed by the Water Research Act, which outlines the purpose and mandated objectives of the organisation. The mandated objectives of the WRC are also in accordance with the requirements of the policies of the Department of Water Affairs (DWA), most notably, the National Water Act (Act No. 36 of 1998) and the Water Services Act (Act No. 108 of 1997).

Water Research Act (Act No. 34 of 1971 as amended)

The principal aim of the WRA is to provide for the promotion of water and related research. The Act requires the establishment of the WRC and the Water Research Fund, and sets the framework within which the WRC operates. The WRC's mandate as set out in this Act highlights the following functions to be carried out by the organisation:

- Promote co-ordination, co-operation and communication in the area of water research and development
- Establish water research needs and priorities
- Stimulate and fund water research according to priority
- Promote the effective transfer of information and technology
- Enhance knowledge and capacity building within the water sector

National Water Act (Act No. 36 of 1998)

The objective of the National Water Act (NWA) is to ensure that South Africa's water resources are protected, used, developed, conserved, managed, and controlled in a sustainable and equitable manner, for the benefit of all persons. The NWA also provides for the pricing strategy for water use charges, the primary mechanism for the calculation of a charge, payable by some or all raw water users, that is also set for research purposes by the WRC. The role of the WRC is to align its funding priorities with those key national water challenges articulated in the NWA, and to help solve water-related problems which are critical to South Africa's sustainable development and economic growth.

Water Services Act (Act No. 108 of 1997)

The objective of the Water Services Act (WSA) is to provide for the right of access to basic water supply and basic sanitation by setting national standards and norms. Section 156, read in conjunction with Part B of Schedule 4 of the Constitution of the Republic of South Africa (Act No. 108 of 1996), vests in the Executive Authority the responsibility to support and strengthen the capacity of municipalities to manage their own affairs, to exercise their powers and to perform their functions. Again, the applicability of the WSA to the WRC rests in the WRC's duty to respond to water supply and sanitation needs with research and development that helps to address those needs.

Contributing towards achieving Government Outcomes

As a national public agency, the WRC actively strives to support the Government of South Africa in achieving its strategic outcomes, with particular reference to the Corporate Plan (Annual Performance Plan) of the Department of Water Affairs (DWA) and the performance agreement of the Minister of Water and Environmental Affairs. Of particular relevance to the work of the Commission is Government Outcome 10, as well as Outcomes 6, 7, and 9:

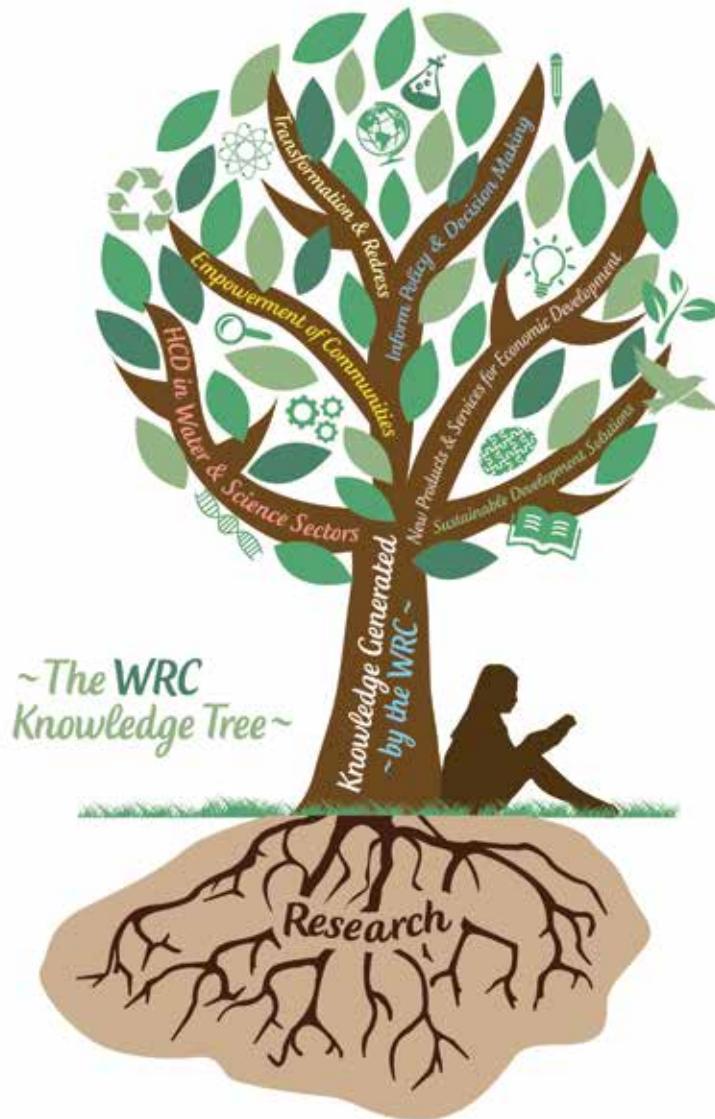
- Outcome 6 – the WRC actively strives to align its projects and activities with achieving an efficient, competitive and responsive economic infrastructure network
- Outcome 7 – the WRC actively strives to align its projects and activities with achieving vibrant, equitable and sustainable rural communities and food security for all
- Outcome 9 – the WRC actively strives to align its projects and activities with achieving a responsive, accountable, effective and efficient local government system
- Outcome 10 – the WRC actively strives to align its projects and activities with achieving protection and enhancement of the country's environmental assets and natural resources

ACHIEVING THE GOALS OF THE 'WRC KNOWLEDGE TREE'

A fundamental guiding framework and strategic planning tool for the WRC's operations at the beginning of its fifth decade is the construct of the WRC Knowledge Tree. The tree metaphor reflects strength in foundation (i.e., 'roots' firmly embedded in sound knowledge) and strong growth (i.e., 'branches and leaves' growing vigorously from this knowledge). It also acts as a yardstick with which to measure the WRC's impact in key domains.

Each of the Knowledge Tree strategic outcome-oriented goals provides a specific priority categorisation for the WRC's projects and activities. Each has its own kind of contribution to the Government Outcomes, either directly or indirectly. The goals are not mutually exclusive. For example, a 'new product' may be a 'sustainable development solution' that 'empowers communities' and 'informs policy and decision making'.

The guiding principle is that every WRC project will strive to achieve as many of the WRC Knowledge Tree outcomes as reasonably possible. This applies within the project, to post-project actions, and to follow-on projects.



Strategic outcome-oriented goals

The WRC's strategic outcome-orientated goals comprise of five impact areas based on the operationalisation of the WRC Knowledge Tree:

Strategic Outcome-Oriented Goal 1	Inform policy and decision-making <p>The WRC aims to commission appropriate evidence-based knowledge generated to guide decision-making, influencing the development of policy, practice or service provision, shaping legislation, altering behaviour, contributing to the understanding of policy issues, and reframing debates.</p>
Strategic Outcome-Oriented Goal 2	Develop new products and services for economic development <p>The WRC capitalises on those projects that have potential to develop new intellectual property or to introduce innovations which create new or improved technologies, products and services that can be used in the real economy. Effectively, this is the WRC's contribution to job creation, and economic development through water science innovations.</p>
Strategic Outcome-Oriented Goal 3	Enhance human capital development (HCD) in the water and science sectors <p>The WRC strives to have high student participation in its projects. Although the emphasis is on post-graduate degrees, inclusion of undergraduates has also been investigated. There is also a particular emphasis on previously-disadvantaged individuals (PDIs) and women. The WRC also aims to support institutional development through mentorship provided to new research leaders.</p>
Strategic Outcome-Oriented Goal 4	Empower communities <p>The WRC places an emphasis on projects that (a) include communities not only as end-users of research but as active participants in the research process from the project design phase; (b) have a direct impact on the livelihoods of communities through water-related interventions, and (c) build sufficient capacity to assist with the post-project sustainability of those interventions.</p>

Strategic Outcome-Oriented Goal 5

Promote transformation and redress

This goal focuses on growing PDI involvement/leadership in projects, as well as helping to promote socio-economic development through the reduction of poverty and inequality in South Africa, particularly of marginalised groups such as women and youth.

Strategic Outcome-Oriented Goal 6

Drive sustainable development solutions

The WRC prioritises those projects that provide sustainable development solutions that have had positive effects on the environment, economy and society including: protection of water resources, optimal water use, equity between generations, equitable access, environmental integration and good governance. Additionally, this goal focuses on developing knowledge products that are fit-for-use to ensure the uptake of research.

The WRC Lighthouses

The construct of the WRC Lighthouse is another strategic developmental tool initiated in the 2013/14 financial year and which will be further developed and implemented to direct research in key areas identified by the WRC. These Lighthouses are flagship programmes, and are trans-disciplinary, multi-KSA and inter-institutional mega-projects that will examine priority water issues across the innovation value chain. Five Lighthouse programmes have been initiated: the green village; water governance, water-sensitive urban design, the water–energy–food nexus and climate change interventions.

SUPPORTING RESEARCH PROJECTS

In 2013/14, the WRC initiated 87 new projects and also completed 87 projects. This represents a cumulative increase in the amount of new research and finalised research funded over the past 5 years. Over the past 5 years the WRC has finalised 401 research projects (Figure 1), indicating a significant contribution to knowledge in the water sector. An average number of 80 projects were finalised per year, for the past 5 years. Over the same 5-year period 381 new projects were initiated (Figure 2), ensuring the continuous contribution of new knowledge to the sector. An average number of 76 new projects were started per year, over the past 5 years. Of the 484 students supported in 2013/14 financial year, 402 were from designated groups.

Figure 1: Annual and cumulative number of projects finalised over the past five years

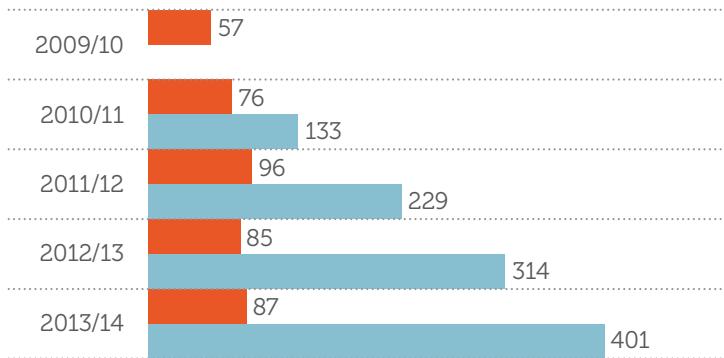
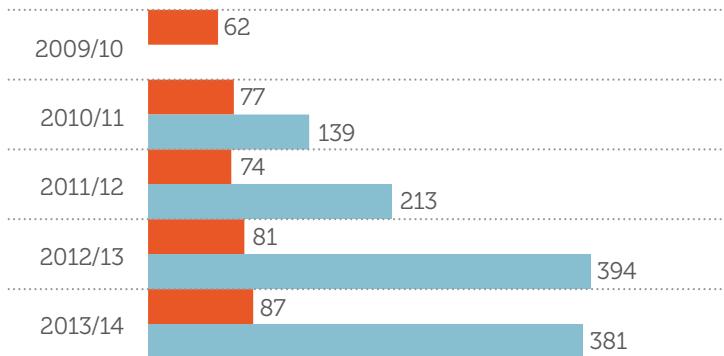


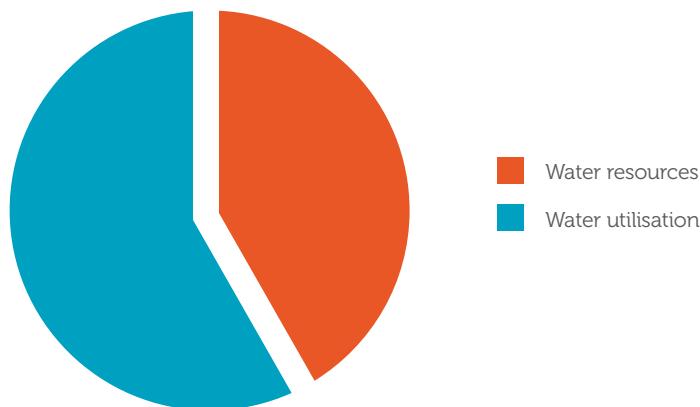
Figure 2: Annual and cumulative number of projects initiated over the past five years



The percentage utilisation of research project funds by the KSAs during 2013/14 (Figure 3) indicates that approximately 44% (compared with 48% for 2012/13) was invested in projects that focused on water resources (including water-linked ecosystems) and approximately 56% (compared with 52% for 2012/13) in projects that focused on water utilisation (including effluent treatment and management, as well as agriculture). This is based on the actual amount paid out as well as accrued for research projects during the financial year under review. The allocation of about 50%

of the fund to issues related to resource management and 50% to issues related to water utilisation was a strategic allocation based on the medium- to long-term needs for research.

Figure 3: Percentage utilisation of research funds in 2013/14



The overall investment in research projects (knowledge creation) amounted to R118.5 m. This was marginally more than what was reported in the previous year, with an increase of 1% (R116.7 m. for 2012/13). Total investment in the support of knowledge creation, sharing and dissemination amounted to R150.0 m. This represents an increase of 3.7% from the previous year (R144.7 m. total investment was reported in 2012/13).

Leveraging income for the creation, sharing and dissemination of water knowledge

During the year under review the WRC continued to leverage levy income by striving to obtain funds from other sources to support water research. During 2013/14 this drive was fairly successful, but substantial amounts were rolled over into 2014/15, e.g., the upfront funding received from the Bill and Melinda Gates Foundation for sanitation research in sub-Saharan Africa, the Blue/Green Drop project, the Gates Sanitation Demonstration project and the DST Innovation for Rural Development Partnership programme. The WRC income originating from sources other than the levy for 2013/14 amounted to R19.2 million. Leveraged income included funds allocated to a number of KSAs for direct support of research projects and funds provided for capacity building, knowledge sharing and dissemination. Leveraged income was obtained from both local and international sources, where the main source of income was due to support by various Government departments for specific research and for other knowledge-sharing projects. Sources of income other than the levy for 2013/14 amounted to about 10% of the total income.

WRC RESEARCH PORTFOLIO 2013/14

What follows is a summary of the WRC's investment in the creation and sharing of water-centred knowledge, over the 2013/14 financial year. This reflects the organisation's strategic focus based on assessment and integration of the needs, opportunities and priorities presented by the current context and challenges facing the water sector in South Africa, and globally.