INTRODUCTION

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The WRC continues to face many challenges and the strategic objectives set through the organisational key performance areas are providing the organisation with a strategic framework to face these challenges successfully. All the challenges are directly tied to the Mandate and core business of the WRC as stated in its mission. The challenges include the creation of appropriate new water-centred knowledge, its dissemination and application, building knowledge networks and building the knowledge base by building capacity. During the past few years the WRC has strengthened its national, regional and global profile by building strong water-centred knowledge links. The WRC has both initiated and undertaken key roles in a number of national, African and global initiatives and many staff members have served and are serving in key leadership positions.

Internally, the ongoing challenge is to build a highly effective organisation and therefore the WRC is unceasingly engaged in developing appropriate competencies and skills and implementing a number of key strategic initiatives and measures that will allow it to assess its effectiveness, and to continue striving towards 'business excellence'. Such challenges require an ongoing review of processes and systems that support the undertaking of the WRC and its staff and aim at improving its financial, human resource and fund management systems. A number of drives and initiatives were set against this challenge and are reflected in the set objectives, indicators and measures for the current financial year. These include issues relating to financial processes and performance, business processes and human resource issues. The WRC is striving to meet all set targets, reflecting on its ability to conduct its financial affairs and manage its financial resources in an excellent manner.

The WRC has maintained its effectiveness in fund management as reflected in the high ratio (about 75%) between funds invested in knowledge creation/funding and supporting activities and its total income budget. It is planned to maintain and even improve this ratio in the next financial year. The WRC invested R88.3m. in research funding during 2005/06 and plans to invest approximately R112m. in research funding during the next financial year (2006/07) (including commitment to ongoing projects and VAT). The distribution of research project funds amongst the various types of providers is in general similar to that of the previous year where higher education institutions (universities) are the major recipients. Building capacity in researchers continues to be an important function of research and in many areas of research supported by the WRC it is evident that students that participated in earlier WRC projects are currently leading WRC-funded research projects and serve as members of steering committees as well as reviewers of new proposals. During the current year (2005/06) the WRC has further improved its support to students, with special emphasis on historically disadvantaged students. Currently about 581 students are supported by WRC projects, of whom about 69% are from historically disadvantaged backgrounds. This is a significant increase from last year (about 116 more students). This increase is mainly due to an increase in the numbers of disadvantaged students that grew by 126 students (400 in comparison to 274). This clearly indicates that the WRC's strategy to improve capacity building through its research projects is bearing fruit. Another important capacity-building initiative is the Water Information Network (WIN-SA), an initiative led and coordinated by the WRC (on behalf of the water sector). WIN-SA is a partnership initiative among all bodies concerned with capacity building for local government and information required for instituting water services.

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Organisation	Number of disadvantaged students	Total number of students
ARC	3	6
Arcus Gibb (Pty) Ltd	4	4
African Water Institute (AWI)	1	1
BKS (Pty) Ltd	1	1
C Swartz Engineering	10	10
Cape Peninsula University of Technology	4	4
Coaltech 2002	4	5
Conningarth Economists	1	
Council for Geoscience	2	3
CPH Water	2	5
CSIR	27	32
Digby Wells and Associates	2	4
Durban Institute of Technology	2	2
Emanti Management (Pty) Ltd	2	3
ERWAT	3	3
Free State Technikon	1	1
Golder Associates Africa (Pty) Ltd	4	6
Human Sciences Research Council	1	1
Mvula Trust	2	2
Nelson Mandela Metropolitan University	4	7
Nemai Consulting	3	3
Partners in Development	2	2
PICWAT	2	2
Proxa (Pty) Ltd	1	2
Pulles, Howard & de Lange	12	18
Rand Water	12	19
Rhodes University	29	41
Rural Integrated Engineering (Pty) Ltd	10	10
SA Institute for Aquatic Biodiversity	2	7
SASRI	2	2
Sigma Beta	1	4
Source Strategic Focus (Pty) Ltd	2	2
SRK (South Africa) (Pty) Ltd	1	1
Sustainable Environmental Technologies	1	1
TBR Project	1	1
Tshwane University of Technology	14	14
Umgeni Water	12	14
University of Cape Town	15	33
University of Fort Hare	17	17
University of the Free State	5	17
University of Johannesburg	6	7
University of KwaZulu-Natal	32	51
University of Pretoria	46	65
University of Stellenbosch	26	50
University of the North-West	3	6
University of the Western Cape	28	38
University of the Witwatersrand	10	26
University of Venda	13	14
University of Zululand	6	7
WRP Consulting Engineers	2	2
Zakhe Training College	3	3
Zitholele Consulting (Pty) Ltd	1	1
	400	581

Another ongoing challenge is the appropriate state-of-the-art dissemination and application of WRC-created knowledge. During 2005/06 the WRC continued to improve on the uptake process of knowledge created via its research activities and maintained its initiatives with regard to public understanding of water science with regular publications such as *Amanzi,* the *Knowledge Review* and *The Water Wheel* which are regarded as highly successful publications. Other successful knowledge dissemination initiatives included Open Days as well as WRC representation at water-related conferences and symposia. In an effort to share knowledge effectively with national policy and decision makers, a series of highly successful briefing notes was created. A recent survey addressing knowledge dissemination indicated a generally high level of satisfaction among stakeholders concerning the relevance and effectiveness of most of the WRC's knowledge dissemination activities, which suggests that the WRC is fulfilling its role as a national hub for water-centred knowledge.

The application of various technologies, processes and/or products developed with the support of the WRC forms another challenge. It requires an understanding of the issues of intellectual property and commercialisation. Although in recent years the understanding of these issues among research providers has been greatly improved, there is a need to actively manage and promote potential applications. By translating needs into research ideas and in turn transferring research results, new technology-based products and processes to the end-users, the WRC is continuing in its drive to provide the country with applied knowledge and water-related innovation. In addition, the WRC is supporting water-related **innovation** and its **commercialisation** where applicable. Often, these technologies, processes and products require commercial involvement in order to make them available for use. The WRC has a widely accepted Intellectual Property (IP) Policy and a Benefit-Sharing Policy which clarifies its contractual requirements for future research projects and improves the level of understanding/knowledge regarding the protection of IP within the water research community. The WRC continues to play an active part in the activities of the South African Research and Innovation Association (SARIMA), and engages with other institutions, such as the Innovation Fund and the Department of Science and Technology on the developments in the IP rights arena. About 88% of the WRC's patent portfolio is licensed out. A number of licensing agreements have been reviewed and some are being re-negotiated with new contracts. In addition, new patents have been through the process of being registered. The licensed WRC patent portfolio includes the Secondary Metabolites, a cluster of 13 patents, currently licensed to Synexa and the product is already being marketed, with the first payment of royalties due shortly. The overall patent portfolio includes the Petro® Process which was licensed to Presario, but since the licence has expired, the WRC has been exploring alternative commercialisation strategies and partners. The Petro® Process is a cluster of 8 patents. Capillary Ultra Filtration (CUF) Technology comprises a cluster of 5 patents and products which are still at various development and piloting stages. This cluster of patents is licensed to FiltRSA and an extension of the licence agreement is currently under negotiation. BioSURE® is a cluster of 36 patents. The products arising from this cluster are under final development and piloting and 27 of the patents are licensed to ERWAT. Possible involvement of the Innovation Fund/IDC in funding commercialisation is being investigated. Acid Mine Drainage (ferrite process) is currently licensed to the Environmental Technologies Agency and the product is still under development. Detection of Fouling of Membranes is a patent registered only in South Africa and the product is still under development. It is licensed to IFU, a German company.

THE WRC RESEARCH PORTFOLIO AND KEY STRATEGIC AREAS (KSAs)

INVESTING IN THE CREATION AND SHARING OF KNOWLEDGE

The research portfolio of the WRC for 2005/06 was developed based on a needs analysis including medium- to short-term as well as explicit and implicit needs. South Africa's water problems/issues are reflected in this portfolio with the aim to scientifically build the required solution and, where possible, the capacity for its use. The process of setting the research portfolio was a result of many interactions at various levels with both the local and the global water sectors. The portfolio was also informed by the latest scientific developments which can be applied to water research so as to provide beneficial solutions.

The WRC continued to invest in the creation of knowledge via its four main key strategic areas (KSAs). These areas include **Water Resource Management, Water-Linked Ecosystems, Water Use**

INTRODUCTION (CONTINUED)

and Waste Management, and Water Utilisation in Agriculture. In general, the portfolio as planned for the year under review was well received by the various stakeholders. The KSA-based structure, with its four water-centred KSAs (as mentioned above), supported by the knowledge-centred KSA, continued to form the core operating framework for WRC-funded R&D, was further consolidated during the year and became accepted generally.

During 2005/06 the WRC invested approximately R88.3m. in research funding (including commitment to ongoing projects). This figure includes about R14.7m. of roll-over. In the initial plan, in addition to funds allocated for the KSAs, about R1.6m. were allocated to a central fund. The R500 000 of project funds assigned to the central fund were allocated to WIN. Crosscutting domains were allocated R1.5m. for research activities but not for direct funding of projects as all project funding is catered for by the KSAs. Crosscutting domains fund research projects via the key strategic areas (KSAs). Short-term projects (consultancies) make up to 6% of the research funding. The balance (about 4%) will be used to support direct capacity-building drives (in addition to the support of capacity building which is included in all research projects) and other research sponsorships. The distribution of research project funds to the various types of providers is in general similar to that of the previous year where higher education institutions (universities) are the major recipients. The strategic re-allocation of research project funds between the KSAs for 2005/06 resulted in **Water Resource Management** receiving 32% of the funds, **Water-Linked Ecosystems** 14%, **Water Use and Waste Management** 30% and **Water Utilisation in Agriculture** 24%. The allocation of research funding to water resources (including water-linked ecosystems) was about 48% and for water utilisation (effluent treatment and management, including agriculture) it was 52%. This reflects strategic investment in water sanitation and hygiene and investment in support of local government and emerging farmers. The allocation also indicates an increase in funds for the KSA **Water-Linked Ecosystems.**

During 2005/06, the WRC supported 336 research projects, of which about 73% (245 projects) were active projects (ongoing and new) and about 27% (91 projects) were finalised. The active projects comprised 175 ongoing projects and 70 newly initiated projects that commenced during 2005/06. The various mechanisms of funding included both non-solicited projects, accommodating projects within the broad research strategy of each KSA, and solicited projects, where research projects are developed in accordance with clear terms of reference, aimed at solving specific problems. The WRC supported 74 solicited projects, which translates to about 30% of active projects. While 44 solicited projects were ongoing, 30 newly solicited projects commenced during the year under review.

In comparison with the previous year, the year under review shows a 26% decrease in the number of projects, i.e. 336 projects in 2005/06 vs. 454 in 2004/05. The number of active projects was reduced by about 30% (from 356 in the previous year to 245 projects during the year under review). This trend of reducing the total number of projects is the result of a drive to improve management of research projects, by emphasising the prompt finalisation of projects, culminating in the high number of projects finalised in the past three years (311 projects). While there is a clear trend of reduction in the total number of projects, the WRC also aims to maintain or even increase the number of new projects as a percentage of the total number of projects. During the year under review new projects formed almost 29% of all active projects and 21% of the total number of projects. This represents a 5% and a 3% increase respectively for similar ratios obtained during the previous year (2004/05). The finalisation of 311 projects and the initiation of 206 new projects during the past three years also illustrate the strong commitment and the emphasis placed on improved management of research projects and the need for the renewal of the research portfolio. The WRC, taking into consideration feedback from its stakeholders and the needs of the water sector, placed emphasis on multidisciplinary projects. Such projects often call for an increased level of investment per project. This means that although the overall number of projects has been reduced, the investment per research project has been increased. The reduction in project numbers is also a result of an increased number of solicited projects. Solicited projects are often large multi-year, multi-provider (consortia-based) projects, frequently with annual budgets in excess of R1m. per annum. During the year under review the WRC supported 74 solicited projects with 40% being newly initiated projects. By using the mechanism of solicited research, the WRC has effectively managed the renewal and relevance of its research portfolio and provided leadership with regard to the creation of new water-centred knowledge. During 2005/06 the WRC almost

doubled the number of solicited projects (from 41 to 74) from the previous year and tripled the number of solicited projects from 2003/04 (from 24 to 74 projects). From 6% of active projects in 2003/04 to about 12% of active projects in 2004/05, the percentage of solicited projects was significantly increased to 30% of active projects in 2005/06.

UTILISATION OF FUNDS BY THE VARIOUS KSAs

The percentage utilisation of research project funds (based on amounts actually paid out) by the KSAs during 2005/06 indicates that about 46% in comparison to about 54.5% (2004/05) was invested in projects that focused on water resources (including water-linked ecosystems) and about 54% compared to 46% (2004/05) 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 to projects during the current financial year. The allocation of about 50% of the fund to issues related to resource management and 50% to water utilisation is ongoing.

Based on cash paid out, the overall investment in research projects (knowledge creation) was about R63.9m.This amount (paid out for research projects) is 19% higher than that paid out in the previous financial year (R53.7m. during 2004/05). This significant increase is due to the application of effective and rigorous fund management procedures and the improved usage of the deliverables system which has been applied to research projects in recent years.

Investment in the total support of knowledge creation, sharing and dissemination amounted to R80m. (including about R3m. for WIN-SA). Both the investments in research projects and in research support, expressed as a percentage of total expenditure, were close to the set budgeted ratios. The ratio addressing funding of the creation of new knowledge (research projects only) is almost (1% difference) identical to that of the previous year. The increase in the ratio for research support (from 72% in 2004/05 to 77% in 2005/06) is mainly due to investment in WIN-SA.

KEY STRATEGIC AREAS (KSAs)

During 2005/06 the KSAs funded research and other related knowledge-sharing, dissemination and application activities using their business plans and more specifically, their revised strategic research portfolios, as the basis for their operational frameworks. The KSAs continued to provide South Africa with leadership and strategic links with the African continent and globally. The KSAs have applied the various funding mechanisms to allow an appropriate balance between solicited and non-solicited research. The balance between solicited and non-solicited research varied for each KSA as a whole or for various research thrusts within each KSA research portfolio. By using solicited research the KSAs directed research into areas of need and either built new capacity and competence or redirected available research capacity into new emerging areas of research. The 2005/06 financial year marks the 4th year of the KSAs operating as the strategic building blocks of the WRC. During the past year the KSAs interacted with both the research providers and the wider sectors and fine-tuned their research portfolio accordingly on a continuous basis.

WATER RESOURCE MANAGEMENT

Scope

No major changes were introduced to the strategic focus of the scope of the research covered by this KSA during the year under review. The focus continued to be guided by the principles and objectives of the National Water Act (NWA) of 1998. The primary principle of the Act is that water resources should be managed to achieve optimum long-term social and economic benefits for all. This implies maintaining an optimum balance between protection of the environment and efficient utilisation. This KSA supports the implementation of the NWA by developing tools and technologies for water resource assessment, and guidelines and decision-support systems to support decision-makers in achieving equitable and efficient allocation of water resources among competing needs. The research has placed emphasis on multidisciplinary approaches that provide decision-makers and planners with appropriate tools that enable them to take cognizance of social, environmental and economic factors in the planning of water resource development.

The research focus continued to shift from supporting policy-making to providing guidance for policy implementation and development of policy instruments. The challenge for research in this KSA during the past year was to provide the necessary information systems, guidelines, decision-support systems, prediction tools and technologies/methodologies that support protection of water resources and equitable allocation of water to meet the needs of the environment, social and economic

development. The NWA places emphasis on stakeholder participation in water resource management. This requires effective participatory tools and approaches that can support multi-stakeholder participation in water resource management at catchment level. The potential negative impact of global climate change on water resource management has been extensively addressed through research within this KSA.

During 2005/06 the research portfolio included new initiatives and current projects addressing the scope described above. Overall, about R20.5m. was invested (paid out) in 105 projects. Of these, 18 projects were initiated while 58 were ongoing. Of the active ongoing and new projects (76 projects) about 43% (33 projects) were solicited projects. During the year 29 projects were finalised and 22 reports published.

WATER-LINKED ECOSYSTEMS

Scope

Research undertaken within this KSA during 2005/06 continued to address the conservation of aquatic ecosystems in order to provide the knowledge for their sustainable functioning in terms of the national commitment to international conventions and the ongoing provision of goods and services which ecosystems deliver. In addition, the National Water Resource Strategy (NWRS) focuses on resource protection as one of its components. The research undertaken in this KSA provides knowledge for protection of the resource, and is therefore central to this aspect of the NWRS. No major changes in strategic direction were envisaged and the research portfolio was found to be sound and applicable. Deviations in programme focus or structure are highlighted below.

Water-linked ecosystems are defined as in-stream (fully aquatic), riparian (dependent on water stored in the river banks and linked to the river) and water table-dependent (dependent on a water table, but not on surface water). This KSA focused on the protection and sustainable utilisation of the aquatic environment and biota (in-stream, riparian and groundwater). This included the research needs around the international conventions on environmental management (e.g. biodiversity) as well as human needs from the aquatic environment (e.g. sustainable management for equitable ecosystem resource utilisation, recreation and ecotourism).

The above was achieved by developing technologies and methodologies, adaptive management processes and capacity to protect the resource and to sustain the flow of goods and services in a time of both demographic and climatic change in the Southern African context. Technologies and methodologies were developed within this KSA to support the implementation of the national water policy to ensure sustainable resource use.

During 2005/06 the research portfolio included new initiatives and current projects addressing the scope described above. Overall, about R8.9m. was invested (paid out) in 37 projects. Of these, 8 projects were initiated while 18 were ongoing. Of the active ongoing and new projects (26 projects) about 11% (3 projects) were solicited projects. During the year 11 projects were finalised and 19 reports published.

WATER USE AND WASTE MANAGEMENT

Scope

The KSA continued to focus mainly on the domestic, industrial and mining water sectors during 2005/06. The aim was to proactively and effectively lead and support the advancement of technology, science, management and policies relevant to water supply, waste and effluent management, for these sectors. This KSA also supported studies on institutional and management issues, with special emphasis on the efficient functioning of water service institutions and their viability. Research on infrastructure for both water supply and sanitation was included. A further focus was on water supply and treatment technology serving the domestic (urban, rural, large and small systems) as well as the industrial/commercial and mining sectors of our economy. This KSA also focused on waste and effluent as well as reuse technologies that can support the municipal, mining and industrial sectors and improve management in these sectors with the aim of improving productivity and supporting economic growth while minimising the negative effect on human and environmental health.

No major changes were introduced to the general scope of the KSA during the year under review. The primary and secondary objectives of the KSA remained the same. However, the KSA portfolio has undergone some change to accommodate emerging needs and technological trends. A new programme on water services regulation was introduced into the thrust addressing **Water Services: Institutional and Management Issues**. In addition, two new programmes that

address technical sustainability of sanitation services and issues related to financial sustainability were added to the thrust: **Sanitation, Health and Hygiene Education.** The focus was on generating in-depth knowledge of the problem and testing new approaches.

During 2005/06 the research portfolio included new initiatives and current projects addressing the scope described above. Overall, about R18.8m. was invested (paid out) in 156 projects. Of these, 36 projects were initiated while 79 were ongoing. Of the active ongoing and new projects (115 projects) about 19% (22 projects) were solicited projects. During the year 41 projects were finalised and 37 reports published.

WATER UTILISATION IN AGRICULTURE

Scope

The strategic focus is on increasing the efficient use of water for the production of food, fibre, fuel-wood and timber; ensuring sustainable water resource use; reducing poverty and increasing wealth of people dependent on water-based agriculture. The needs and requirements of present and future generations of subsistence, emergent and commercial farmers continued to be addressed through the creation and application of water-efficient production technologies, models and information systems within the following inter-related sub-sectors of agriculture, namely:

- Irrigated agriculture
- Dry-land agriculture
- Woodlands and forestry
- Grasslands and livestock watering
- Aquaculture

The challenge for applied research and knowledge dissemination is to provide solutions to practical problems which are experienced in the process of utilisation, development and protection of water resources, thereby contributing to productivity growth in agriculture.

During 2005/06 the research portfolio included new initiatives and current projects addressing the scope described above. Overall, about R15.6m. was invested (paid out) in 38 projects. Of these, 8 projects were initiated while 20 were ongoing. Of the active ongoing and new projects (28 projects) about 57% (16 projects) were solicited projects. During the year 10 projects were finalised and 8 reports published.

CROSSCUTTING DOMAINS

The WRC's mission statement requires the WRC's R&D portfolio to contribute to a better quality of life for all South Africans. This means that investment in the creation of water-centred knowledge must seek outcomes which promote social development and societal well-being, economic growth that benefits all, a better environment and minimisation of health risks. Achieving these goals has called for the establishment of four crosscutting domains: **Water and Society; Water and the Economy; Water and the Environment;** and **Water and Health** to serve as frameworks for integrating research initiatives across the KSAs and for ensuring that the R&D portfolio of the WRC as a whole is sufficiently well focused on these important national issues. Not only are these issues of national importance, but they also enjoy regional and international priority, as clearly indicated by the agendas of major events and movements such as the WSSD, the 3rd World Water Forum and NEPAD.

The domains draw together relevant programmes and projects that are under way within the portfolios of each of the KSAs and focus them on issues falling within the scope of the various thrusts in each of the domains. It is also the role of each of the domains to provide leadership and support for new KSA initiatives needed to further knowledge with regard to various domain-related strategic thrusts. When necessary, the domains may also drive specific programmes and projects that are overarching and relate to all KSAs in a general manner.

WATER AND SOCIETY

Scope

The scope of this domain continues to address water as a social good and the vital role water plays in social development. It provides an integrating framework for, and further facilitates expansion of, that research and development within the different KSAs which contributes to a sound balance between the manner in which water resources are used and cared for by society, and the benefits which society as a whole derives from the use of water. The domain endeavours to find ways to assist society in developing a sound understanding and appreciation of the various issues around water as a scarce resource, as these relate to the need for equitable (including transboundary) sharing of the resource, avoidance of conflict, promotion of cooperative water resource management and productive and sustainable resource use. Finding improved, sustainable and socially acceptable ways of meeting society's needs for water services is another important focus area because of the continuing service backlog. Furthermore, inter-linkages between poverty issues, gender issues and access to water and water services need to be established, and the knowledge gained applied in promoting poverty alleviation and better quality of life for society as a whole.

INTRODUCTION (CONTINUED)

WATER AND THE ECONOMY

Scope

The scope of research addressed by this domain has remained unchanged from the previous year. In the SA context water is first and foremost treated as a common (social) good. Water is recognised as being essential for sustaining life and is a commodity to which people and the aquatic environment have a legally protected right. However, water is also recognised as an economic good, the use of which has a major impact on the creation of wealth and the well-being of people. Almost without exception, there is an increasing interest in assessing the economic value of water, using water as a catalyst for the generation of wealth and prosperity, and using economic instruments to increase efficiency and effect desired behavioural change among water users. The use of water tariffs to effect changes in water consumption and the use of waste discharge charges to internalise pollution costs and, in so doing, effect pollution reduction and desirable improvements in water quality, are currently being investigated with a view to implementation.

This domain will integrate the economic aspects of water-related investigations funded by the KSAs. It will also identify overarching issues that need to be addressed at a higher level of integration. Projects and activities under this domain will determine the value of water, assess its role in wealth creation and the use of economic instruments in changing the behaviour of society at the appropriate micro-, regional and national levels.

WATER AND THE ENVIRONMENT

Scope

The scope of research in this domain will remain the same following changes introduced at the commencement of the 2004/05 financial year as a result of extensive stakeholder consultation. Incomplete knowledge and understanding of the linkages between environmental components (atmospheric, marine, terrestrial, aquatic, subterranean) within the hydrological cycle, and between the hydrological cycle and governance systems, hinder sustainable water resources management. This crosscutting domain promotes enhanced understanding of whole-ecosystem functioning in the context of the broader environment and its effects on water resources, and supports the development and application of good environmental governance systems. Activities within this domain contribute to sustainable water resources management that meets the changing needs of society, by combining:

- Our understanding of good governance principles; with
- Our knowledge of environmental components (atmospheric, marine, terrestrial, aquatic, subterranean) and processes within the hydrological cycle.

The primary focus of the domain is to integrate existing and new insights generated by research within and between the KSAs and by other institutions working in related fields. In addition, this domain will stimulate the generation of specific new knowledge and understanding that will equip the water sector to anticipate and respond appropriately to changes within the biophysical environment. Although this domain is characterised by integrating research at a high / meta-data analysis level, it is recognised that such research is only possible on the assumption that we have a sound foundation of appropriate basic research (and data) in place.

WATER AND HEALTH

Scope

Water-related health forms a crucial and integral component of our daily quality of life. Health-related water research is undertaken with the aim of improving water quality and hygiene practices in order to save lives and reduce the cost and effort in treating diseases and their symptoms.

This domain continues to play an essential role in providing an integrating framework for all the WRC's health-related research and development initiatives, identifying gaps and negotiating the initiation of gap-filling research in crucial areas. In fulfilling this role, the domain assumes the responsibility for the structuring of a co-ordinated, needs-driven, dynamic health-related water research portfolio on behalf of the WRC, with contributing projects being funded and managed in the appropriate KSAs.

The focus is on water-linked health impact associated with microbial or chemical contamination or transferred via water-associated vectors. The domain aims to improve knowledge regarding the origin, survival and persistence of microbial, biological and chemical agents that may pollute water and may affect human health. The domain supports the development and utilisation of methodologies to identify and quantify the occurrence of pathogens and contaminants in water,

as well as risk assessment and epidemiological studies.
A holistic, multidisciplinary approach is followed in order to develop a comprehensive understanding of the origin/sources and spatial extent of pollution; water usage patterns; the effects of degraded water quality on human and animal health and the need for, and efficiency of, various water treatment options. The development of guidelines, protocols, manuals and pamphlets as tools to disseminate research findings is supported. The emphasis is on a pro-active approach to identify and address causes, rather than on a passive response to addressing symptoms. This approach should ensure research products that are relevant, user-friendly, practical and scientifically valid.

LEVERAGING INCOME FOR THE CREATION, SHARING AND DISSEMINATION OF WATER-CENTRED KNOWLEDGE

During recent years the WRC has placed emphasis on leveraging levy income by striving to obtain funds for support of water research from sources other than the levy. This drive has been highly successful. The WRC income originating from sources other than the levy has increased by an amount of about R5.7m. from about R4.3m. in 2004/05 to R10m. during 2005/06, reflecting an increase of roughly 132% over the previous year. The budget was set higher in expectation of increased leverage income and this has been met. Income from interest received amounted to R3.5m. Leveraged income included funds allocated to a number of KSAs for direct support to research projects and funds provided for knowledge sharing and dissemination (e.g. the Water Information Network (WIN-SA)). 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 other knowledge-sharing projects.