



WRC plays host to Dr Schulting



The WRC played host to Dr Frans L. Schulting, the Managing Director of the Global Water Research Coalition (GWRC) during August 2002.

The GWRC is a joint venture of 12 global research organisations from 7 different countries. One such organization is the WRC. The GWRC focuses on 5 areas of water research: Endocrine disrupting compounds, Algal toxins, water-borne pathogens, water quality and distribution systems and dealing with emerging hazards in water.

Dr Schulting has an impeccable track record as a scientist: a chemical engineer, an active member of the KIWA research team in the Netherlands and a member of RECIPRO (Review of International Research Organizations). He was here to discuss the area of endocrine disrupting compounds with Ms A. Moolman from the WRC, who is tasked with this project.

"My organisation is all about networking and networking with organisations such as the WRC can only enhance our global water research initiatives. The WRC has built up a formidable knowledge base over the years and is now also focused on being a knowledge hub," says the eminent scientist, who is committed to propelling the GWRC into the future.

For more information about the GWRC visit the website at <http://globalwaterresearchcoalition.net>.

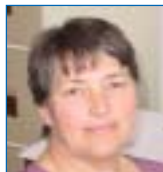
Key Strategic Area (KSA): Water-Linked Ecosystem



Dr Steve Mitchell
(Director)



Annetjie Moolman
(Research Manager)



Una Wium
(Co-ordinator)



Agnes Molubi
(Group Assistant)

This KSA focuses on:

- In-stream ecosystems
- Riparian ecosystems
- Water-table dependent ecosystems

Primary Objective:

Provision of knowledge to enable good environmental governance to ensure utilisation and sustainable management of water-linked ecosystems in a water-scarce country during times of demographic and climate change.

Secondary Objectives:

- Develop an understanding of the ecological processes
- Develop knowledge for sustainable utilisation and management
- Transfer the knowledge to appropriate end-users
- Build capacity in both research and management

Research Thrust 1:

- The ecological reserve
- Estuary management
- Ecosystem health
- Toxicology
- Amelioration of impacts
- Biological control

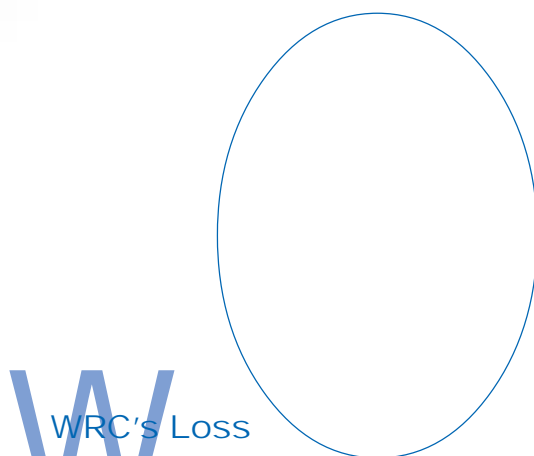
Research Thrust 2:

- Rehabilitation
- Wetlands
- Groundwater-dependent ecosystems

Areas of key importance:

- Improving communication between researchers and managers and the public
- Ensuring that there is sufficient capacity to maintain sustainable management of rivers, wetlands and estuaries

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WRC's Loss

On 28 August 2002, Hugo Maaren, a Research Manager at the WRC, passed away.

Hugo came to South Africa from Holland in 1967. He began his career as a pedologist where he developed in-depth knowledge of soil, climatic and agricultural conditions in South Africa. In 1988 Hugo was appointed as Research Manager at the WRC.

Hugo was tasked with the portfolio of Surface Hydrology where he initiated several innovative ideas. Hydrological modelling went from strength to strength, not least as a result of his insistence that the models always reflect sound science, and that physical processes simulated by the models be verified by properly designed and executed field studies. Consequently, field studies under his management touched upon diverse subjects such as water movement in soils and in sloping terrain, water use of natural and alien vegetation and commercial forests, runoff from catchments with diverse land-use practices.

Hugo's growing fascination with integrated catchment management concepts and strategies resulted in the addition of the field of Integrated Water Resource Management to his research management responsibilities within the WRC.

Hugo was a recognised leader in the hydrological and water resources community in South Africa. He was the WRC's Research Manager responsible for the Computing Centre for Water Research (CCWR), which performed a valuable networking function for this community. He was for many years the secretary of the South African National Committee of the International Association of Hydrological Sciences (SANCIAHS) and the driving force behind the many successful biennial conferences arranged by this organisation. He also worked hard at forging international links both within Africa and further afield so as to derive the maximum benefit for water resource management in South and Southern Africa. He enjoyed especially close links to the SADC Water Sector and played a strong role in the development of joint research initiatives.

Hugo was a colleague whom we all respected and who will be sorely missed.



Newsletter of the Water Research Commission

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Focus on:

This column will focus on prominent researchers in the water sector.

Win, Win, Win

Professor Christopher Andrew Buckley (Chris) is a research professor in the School of Chemical Engineering and head of the Pollution Research Group (PRG) at the University of Natal, Durban. He has been involved in contract research in water and effluent management at the University of Natal since 1976.

His current research interests involve life cycle assessment, industrial symbiosis, waste minimisation, cleaner production, water pinch and biological treatment processes. The PRG aims to promote cleaner production, reduce water demand in industry, reduce water pollution from industry, reduce the cost of water treatment processes and to improve the efficiency of water treatment processes. These aims may sound Utopic to some environmentalists. However, it is Chris's perseverance and his dedication to water research that make these aims attainable and realistic. Since 1990 the Water Research Commission (WRC) has funded research projects of the PRG to the tune of R17 million. Currently the PRG has a professional staff of 6 people. A total of 28 masters students and 4 doctoral students have been supervised to completion; 24 masters and 6 doctoral students are currently being supervised. Over the years the PRG has gained an international reputation in membrane technology, textile effluent management and treatment (physical and biological) and industrial waste minimisation.

Like most research organisations, the PRG strives to establish networks with various stakeholders. The PRG has been invited by Sasol to be involved in developing a strategy and action plan to manage their waste and effluent at the Secunda complex. The PRG has also been involved with Eskom in developing strategies for handling liquid effluents from power stations.



Prof Kasan, Chairperson of the WRC Board, hands over the WRC Annual Report to Mr Mike Muller, Director-General of the Department of Water Affairs and Forestry

This 53-year old project leader (Waste Minimisation) for the National Waste Management Strategy is revered by the various stakeholders: central and local Government, NGOs, civic-based organisations, labour and business. Such expertise and commitment in an era when industrial pollution has been rife, can only be construed as a distinct advantage to South Africa! Chris says that most of his success is attributed to members of the PRG team, both past and present. There are currently 20 Waste Minimisation (Wastemin) Clubs which involve 200 factories. These Wastemin Clubs are currently active in four provinces. Chris's relentless pursuit for solutions in his field is not blinkered in any way: he believes in technology transfer.

Earlier this year Chris and Dr Valerie Naidoo were invited to accompany members of the South Durban Strategic Environmental Alliance (an environmental NGO) to Denmark on a study tour to compare the environmental performance of Danish and South African oil refineries.

Chris is a strong believer in seeking solutions to environmental problems that result in a win-win-win situation for business, the environment and the community.

His most significant project, which reflects technology transfer, is the patent relating to the **Tubular Filter Press**. The result was an international product for a local textile company and international companies have been created to market a range of associated products. The process engendered further interest when it was viewed as a basis for a PhD thesis and culminated in the construction of the process evaluation facility at the Wiggins Water Treatment Plant.

Chris's motto is that "Cleaner production makes good business sense. This is tantamount to a win, win, win situation. The winners are: the supplier, the buyer and the environment," says this eminent engineer. It is efforts such as these that must have secured Chris's recent appointment: a member of the National Water Advisory Council for Water, an appointment made by the Minister of Water Affairs and Forestry, Mr Ronnie Kasrils. Chris will hold this position for a period of three years.

The WRC invests in research and development to improve the quality of our most precious commodity: water. It is researchers such as Chris Buckley who contribute to the intellectual capital of the WRC and to the country as a whole. Chris, we applaud your efforts!

For more information visit the website at www.nu.ac.za/departments/default.asp?dept=prgund

The WRC @ the Waterdome

The Waterdome, a parallel event of the World Summit on Sustainable Development (WSSD) ran from 29 August to 3 September 2002. The WRC joined other stakeholders in the water sector at the South African Pavilion at the Waterdome.

The WRC contributed to the this exhibition in the following ways:

- Making a financial contribution
- Providing the exhibition with multi-media case studies
- Providing newsworthy articles for inclusion in the special newspaper at the Waterdome
- Providing pre-recorded radio interviews for broadcast
- Providing information on the latest available reports.

WRC-funded research supports the concept of sustainability. The WRC component of the South African Water Sector was frequented by many visitors, where Ms Martha Pretorius or Mr Yuveng Gounden, the various Research Managers and Directors were constantly on hand to receive them.

WRC Annual Report 2001/2002

The WRC's Annual Report was received by Mr Mike Muller, the Director-General of the Department of Water Affairs and Forestry, on behalf of the Minister of Water Affairs and Forestry, Mr Ronnie Kasrils. The report contains a wealth of information about the new strategic structure of the WRC as well as a wide range of research highlights. This report is available on request - E-mail: Yuveng@wrc.org.za



Interview with Prof H. Kasan, the Chairperson of the WRC Board

Yuven Gounden of the WRC interviewed Prof H. Kasan recently

How do you intend supporting the newly structured WRC as Chairperson of the Board?

The WRC must become a relevant, customer-oriented, socially responsible, dynamic hub of water-centred knowledge, providing leadership locally and being recognised as a global player.

In order to be relevant and effective, the WRC must support not only the creation of knowledge, by funding research and development, but also address the transfer and dissemination of the created knowledge.

The WRC must strive to provide the country with applied knowledge and water-related innovation by translating societal needs into research ideas, which are developed into results, knowledge, and technology-based processes/products which benefit South African society.

Given that South Africa is a water-stressed country, which provides substantial challenges to the water fraternity, the need for and importance of building intellectual capacity competencies and skills amongst water professionals and society at large is critical. The training of engineers, scientists and other water-related professionals is of national importance.

The WRC will play the leading role in building a sustainable water-related knowledge base in South Africa. This will be done by:

- Investing in appropriate and relevant water research and development
- Building sustainable and appropriate capacity
- Skills development for the water sector, and
- Strategic partnerships in order to achieve objectives more effectively.

The role of the board is to provide strategic direction and to ensure that the organisation, through management, executes strategy and performs effectively and efficiently. As Chairperson of the Board it is my role to ensure that the Board provides the strategic direction required and challenges management to perform in executing and operationalising the strategy. This process is well under way with the formation of several board committees, which have specific terms of reference. The newly appointed Board has a high degree of enthusiasm, expertise and commitment. The management and board have my full support and commitment to transform the WRC into a dynamic organisation.



Where do you see the WRC in the next ten years?

The organisation will indeed be a dynamic hub for water-centred knowledge. As an innovative organisation, it will continuously provide novel but practical ways of packaging and transferring knowledge into technology-based products for the water sector and community at large, both locally and globally.

Is there some common ground in your role as general Manager at Rand Water and as Chairperson of the WRC Board?

Indeed. In my role as Divisional General Manager of Water Treatment Technology at Rand Water, the division provides advice and services to the core business, viz. abstraction, purification and distribution of potable water. The advice and services are of a scientific and technological nature, which ensure that Rand Water's water treatment processes, environmental management systems, water quality criteria and monitoring systems are comparable to best practice on a global basis. The end result of my role at Rand Water ensures that the organisation provides good quality water at an affordable price to some 10 million consumers on a daily basis.

The role of the WRC is to ensure that the organisation addresses appropriate and relevant water research, technology development, and capacity development in order to improve the lives of our people.

Therefore, both my roles contribute toward the improvement of the lives of our people.

Are there any aspects that you would like to see implemented during your stint as Chairperson of the Board?

During the past 20 years the WRC has funded the development and innovation of many technologies and products. These technologies and products should be marketed and commercialised. In addition, the WRC with its strong global reputation should form strategic alliances with appropriate international organisations and agencies in order to be the conduit of water-related development within SADC and the African continent. Through these initiatives the level and quality of skills and competencies amongst South African and African water professionals can be significantly enhanced.

1 February 2003

Symposium on Integrated Water Management in the City of Cape Town to be held at the University of the Western Cape.
Contact: Gail van Rensburg: +27 21 487 2430 (Tel); +27 21 487 2213 (Fax); e-mail: gail.van_rensburg@capetown.gov.za; website: www.capetown.gov.za

OVERSEAS

2-4 October 2002

An international conference with the theme "From Nutrient Removal to Recovery" will be held in Amsterdam, the Netherlands.
Contact: +31 20 460 2466 (Tel); +31 20 4602475 (Fax); e-mail: r.r.kruize@inter.nl.net

7-10 October 2002

6th IWA Symposium on Off-flavours in the Aquatic Environment in Barcelona, Spain.
Contact: +34 93 342 39 00 (Tel); +34 93 342 3945 (Fax); e-mail: fundacion@agbar.es

22-25 October 2002

VII Latin America Workshop and Symposium on Anaerobic Digestion in Mirada, Mexico
Contact: ++52 5622 3324 (Tel); ++52 5616 2789 (Fax); e-mail: daal2002@pumas.ingen.unam.mx

4-9 November 2002

The 1st Conference of the Indian Ocean Global Observing System (IOGOOS) in Grand Bay, Mauritius.
Contact: (230) 427 4433 (Fax); e-mail: moi@intnet.mu

13-14 November 2002

International Conference: Sustainability of Water Resources in Murdoch University, Western Australia.
Contact: +61 8 9360 7310 (Tel); +61 89360 7311 (Fax)

20-22 November 2002

Conference on Leakage Management - A Practical Approach in Lemesos, Cyprus.
Contact: +357 25 749919 (Tel); +357 25 749744 (Fax); e-mail: registrations@leakage2002.com

25-26 November 2002

Conference on Sustainability in the Water Sector in Venice, Italy.
Contact: +44 20 7654 5518 (Tel); +44 20 7654 5555 (Fax); e-mail: sustainability2002@iawhq.org.uk

16-23 March 2003

3rd World Water Forum in Kyoto, Shiga, Osaka.
Contact: www.city.kyoto.jp/kensetu/mizui/

New Researcher Joins the WRC



Renias Dube joined the ranks of the WRC as from 1 September 2002. This 31-year old innovative Water Resources Engineer was born in Delmas. He holds a Bachelor of Science Honours Degree in Civil Engineering and a Masters Degree in Engineering and Water Resources Engineering (pass with merit). He is currently in the final stages of studies towards his Doctorate in Environmental Engineering at the University of Pretoria.

As a Research Manager in the Water Resource Management Key Strategic Area (KSA), Renias's main focus area will be the research thrust: Water Resources Assessment. Renias's expertise in this field coupled with his skill as a computer programmer will ensure that the intellectual capital at the WRC grows from strength to strength. "I am looking forward to meeting other researchers in the water sector and broadening my horizons. I also wish to add to the knowledge base at the WRC," says the quiet and unassuming engineer.

When he is not occupied with Hydrological Modelling and Water Resources Engineering, he relaxes with his wife, Beatrice, who has made the sacrifice of resigning her job as teacher to take care of their daughter, Chelsea and son, Allen. Renias also relaxes by playing lawn tennis, chess, listening to jazz music and surfing the net.

We at the WRC wish to welcome you to our family and we hope that your stay with us will be a long and rewarding one.

What's New

Report No. 798/1/02

Quantification of the Water Balance of Selected Rehabilitated Mine Soils Under Rainfed Pastures in Mpumalanga

This report is one in a series of studies which aims at improving rehabilitation and quantifying impacts as a result of mining activities. This report is a joint venture between the National Department of Agriculture, the Water Research Commission and the Agricultural Research Council.

Report No. 814/1/02

Diatoms as Indicators of Water Quality in South African River Systems

This report concentrates on multivariate analyses as well as on water quality and the manner in which diatom dominance is able to interpret water quality. The project sets out to evaluate how well diatoms can reflect water quality and whether it will be possible to apply diatoms as tools in water quality monitoring.

Report No. 833/1/02

Measurement of COD (Organics) in Drinking Waters and Tertiary Effluents

This report provides an alternative to using an organic carbon analyser for assessing dissolved organic carbon (DOC) in water down to concentrations of about 1 mgC/l (i.e. COD of about 3 mg/l). The method involves a novel modification of the conventional COD (chemical oxygen demand) test.

Report No. 964/1/02

Electro-Membrane Reactors for Desalination and Disinfection of Aqueous Solutions

This report deals with a water purification unit where the technology of electrochemically-activated sorption is combined with the micro-filtration properties of ceramic membranes. The novel electro sorption unit developed showed desalination and micro-filtration properties.

Report No. 1026/1/02

Consolidation and Transfer of Limestone Mediated Stabilisation Technology for Small to Medium Scale Users

This report deals with an alternative method of stabilising soft, acidic waters by contact with limestone (CaCO₃), rather than the expensive method of adding lime and carbon dioxide. Limestone-based stabilisation has been shown to be an attractive means of mitigating against both aggression and corrosion, principally because of simplicity of operation, and significantly reduced chemical costs.

Report No. 1027/1/02

Assessment of the Limestone Mediated Sidestream Stabilisation Process, with Emphasis on Use Thereof by Rand Water for Stabilisation of the Lesotho Highlands Scheme Water

This report deals with an alternative stabilisation process which involves contact with limestone (solid calcium carbonate), which has been shown to have many advantages over the conventional lime-mediated stabilisation. A geophysical survey of a limestone quarry near Bredasdorp

revealed that sufficient quantities of limestone were available to stabilise all the waters of Rand Water, Umgeni Water and Cape Metropolitan Council for approximately 100 years.

Report No. 1054/1/02

Cultivation of Plants in restored Urban Wetlands for Income Generation in Local Communities

Urban wetland conservation and restoration would be encouraged if urban wetlands could be turned into sustainable economic assets by the cultivation of economically valuable plants in wetlands. The WRC initiated this pilot project on the cultivation of aquatic plants in restored urban wetlands to demonstrate income generation in local communities and the restoration and management of degraded urban wetlands and stormwater channels.

Report No. 1077/1/02

The Use of Life Cycle Assessment in the Selection of Water Treatment Processes

This study compares the environmental burdens resulting from two different technologies used in the production of potable water in South Africa: conventional technology and the emerging South African membrane filtration method. The environmental impact categories, on which the performance of the two technologies of producing potable water are compared, include global, regional and local impacts.

Report No. 1095/1/02

Tier 1 Assessment of Selected Radionuclides in Sediments of the Mooi River Catchment

This report describes a scoping level investigation of the radioactivity contained in sediments and is adding to the data required to fully understand the fate of radionuclides in the Mooi River and the risk they pose.

Report No. 1273/1/02

Development of a Methodology to Determine the Effectiveness of Water Conservation (WC) and Water Demand Management (WDM) Measures

This report focuses on a methodology to determine the effectiveness of WC and WDM measures, taking into account the particular conditions which are pertinent to South Africa, existing related methodologies as well as local and international case studies. The emphasis of the study is on the development of a practical methodology to determine the effectiveness of WC and WDM measures that are consistent with the principles of Integrated Resource Planning (IRP) as well as being applicable to developing countries.

Report No. 691/2/02

The Extraction of Water from Sediment-Laden Streams in Southern Africa

This report is a secondary outcome of a research project funded by the Water Research Commission titled *The Removal of Floating and Suspended Materials from Streams*. This report deals with sediment-related problems encountered in the extraction of water from rivers and other sediment-laden streams.

OUT THERE

SOUTHERN AFRICA

21 October - 1 November 2002

Training course: Management & Institutional Options: Enhancing Urban & Rural WES Service Delivery in Dar Es Salaam, Tanzania.
Contact: Netwas International 254-2-890555/6/7/8/9/60 (Tel); 254-2-890553/4 (Fax); e-mail: netwas@nbnet.co.ke

4-8 November 2002

Environmental Auditor Course.
Contact: info@crystalclear.co.za

13-17 November 2002:

The 4th Eastern and Southern Africa Region (ESAR/IWA) Conference in Livingstone, Zambia.
Contact: Rees Mwasambili; 260-1- 226 941/2 (Tel); 260-1-226904 (Fax); e-mail: wasaza@zamnet.zm; www.esar.org.zm

4-6 December 2002

The International Association for Hydraulic Research (IAHR) will hold their biennial congress in Arusha, Tanzania. The theme is "Water - the lifeblood of mankind".
Contact: +255 22 212 4265 (Tel); +255 22 212 2836 (Fax); e-mail: iet@iet.co.tz

4-7 December 2002

The 7th International Conference on Public Communication of Science and Technology (PCST) at the University of Cape Town.
Contact: Deborah McTeer: +27 21 406 6348 (Tel); +27 21 448 6263 (Fax); e-mail: Deborah@curie.uct.ac.za; www.fest.org.za

4-10 December 2002

Analitika 2002; Analytical Science: Vital for Prosperity at the University of Stellenbosch, Cape Town.
Contact: IMM@sun.ac.za

11 December 2002

Short course on Environmental Analysis at the University of Stellenbosch.
Contact: 021 938 0433 (Tel); e-mail: mandy.salomo@mrc.ac.za