

Water by numbers

R1,4-billion – The monies owed by municipalities to water boards in May 2010, of which R704-million is debt in arrears. The water boards owed the most are Bloem Water, Botshelo Water, Bushbuckridge Water, Lepelle Northern Water and Sedibeng Water.

38 – The number of water treatment systems which obtained the Blue Drop Award for the 2010 assessment cycle. A total of 94% (787) of the country's water treatment plants were assessed.

87% – The percentage of the global population who gets their drinking water from improved sources.

751-million – The number of people worldwide who share their sanitation facilities. In sub-Saharan Africa 31% of the population share toilets.

200 000 Mℓ – The volume of bottled water produced every year in the world.

21 – The number of towns in South Africa where rate payers have declared disputes with local municipalities over non-delivery of services. In 24 towns rates and taxes are being withheld and instead being paid into trust accounts.

90% – The percentage of wastewater in developing countries that is discharged untreated into rivers, lakes or oceans, according to the UN.

672-million – The number of people who will still lack access to improved drinking water sources in 2015, according to a report released by the World Health Organisation and the United Nations Children's Fund.

98,4% – The score achieved by Johannesburg Water in the 2010 Blue Drop assessment. Johannesburg achieved the highest score in the country.

New WISA division caters for small sewage works

A new division aimed at building relationships between various stakeholders in the small wastewater treatment works sector has been established under the auspices of the Water Institute of Southern Africa (WISA).

The Small Wastewater Treatment Works (SWWTW) Division, which was officially launched in Durban earlier this year, will deal with issues and best practice around both package plants (i.e. plants built off-site prior to implementation) and small (< 2 Mℓ/day) sewage plants constructed on-site. According to SWWTW Chair Dr Valerie Naidoo, previous engagements between authorities and operators of small plants have highlighted a certain level of frustration, distrust and confusion relating to regulation, standards, and roles and responsibilities of professionals working in this field. "The new division aims to build relationships between the various roleplayers, which will ultimately lead to better consensus with regards to designing, managing, operating, maintaining, supplying and regulating small wastewater treatment works. At the same time this will lead to improved protection of the environment and society through responsible application and maintenance of appropriate technologies."

The division, which is made up of ten members and a chairperson, has undertaken to provide a number of activities, services and initiatives to this specific community within the sector. Among others, the division will be scrutinising the newly-endorsed Department of Water Affairs package plant guidelines and the Water Research Commission *Process Design Manual for Small Wastewater Treatment Works* and facilitate the rollout and review of the documents by the sector. Members will also look at the formation of a package plant supplier association, which will allow the division to engage the numerous professionals more constructively when seeking feedback for a number of planned activities.

For more information, visit:

www.wisa.org.za/TDSWWTW

Rural produce found to be hazardous to human health

Researchers have expressed concern over the safety of fruits and vegetables grown by subsistence farmers where minimal water and sanitation infrastructure exists.

This after studies of tomatoes grown by small-scale farmers in Limpopo showed them to be riddled with disease-causing bacteria and opportunistic pathogens.

Researchers from the universities of Johannesburg and Venda examined tomatoes from communal farming fields in the Vhembe district as well as the river water used for irrigation. Communities living in the district consume fruits and vegetables such as tomatoes and cabbages which are grown in community field farming projects. The farming fields are irrigated by water from nearby rivers, which are surrounded by settlements and used by cattle and other domestic animals. No toilet facilities exist resulting in people having to defecate in the open. When it rains these wastes are washed into the rivers. People also use the rivers for drinking, bathing and recreation.



The tomatoes and irrigation water samples were tested for a host of bacteria, including faecal coliforms, pathogenic *E. coli*, *Staphylococcus*, *Salmonella* spp. as well as several viruses such as rotavirus and hepatitis A. A variety of opportunistic pathogens were identified from the food products as well as the water sources and indicate the potential risk of infections and diseases such as meningitis, bacillary dysentery, typhoid, respiratory infections, urinary tract infections, pneumonia, gastroenteritis and food poisoning. "This could have serious consequences if hygiene, water and sanitation infrastructure and practices are below standard in these communities," say the researchers.

The study was presented at the biennial conference of the Water Institute of Southern Africa in Durban in April.

Municipality takes ownership of wellfield

Overstrand Municipality has taken ownership of a wellfield that is set to significantly augment its existing water supply.

The wellfield, which yields 1,6 million cubic litres of high-quality water a year, was officially handed over by Umvoto Africa in May. The earth sciences consultancy originally sourced the wellfield six years ago, implementing a ground-breaking modelling, monitoring and management system that has received local and international attention.

The project incorporates a sophisticated telemetry system that enables the municipality and Umvoto staff to monitor the system from the comfort of their offices. Should there be any potential problems, the system automatically sends an SMS alarm message to staff. The project also incorporates satellite image

monitoring, and modelling systems for monitoring abstraction impacts.

The Overstrand area has seen a huge increase in annual water demand in recent years – from 2 million m³ in 2000 to 4 million m³ in 2008. This while the local De Bos Dam can only provide an allocation of 2,8 million m³/year to the municipality. To overcome water shortages the municipality has embarked on a two-pronged approach, namely conserving existing water supplies while searching for alternative water sources.

Interventions have included reducing water leaks, clearing alien vegetation, rolling out community awareness campaigns, and encouraging water-wise gardening. In addition, millions of litres of treated effluent are now being used to water the local golf course.

Water on the web

www.isarm.net

The worldwide Internationally Shared Aquifer Resources Management (ISARM) Initiative is an initiative of UNESCO and the International Association of Hydrogeology (IAH) aimed at improving the understanding of scientific, socio-economic, legal, institutional and environmental issues related to the management of transboundary aquifers. Since its start in 2002, ISARM has launched a number of global and regional initiatives designed to delineate and analyse transboundary aquifer systems and to encourage riparian states to work cooperatively toward mutually beneficial and sustainable aquifer development.

www.cbd.int/protected

This newly-launched website for the programme of work on protected areas under the Convention on Biological Diversity provides important information, e-learning tools and forums for the community of experts working on protected area networks around the globe. The website also provides information on the values and benefits of protected areas, as well as access to over 1 000 tools and resources sorted by goals, searching through specific topics and types as well as language and geography.

www.peatociety.org

The International Peat Society is an international non-governmental and non-profit organisation with 1 412 members from 29 countries. It is dedicated to fostering the advancement, exchange and communication of scientific, technical and social knowledge and understanding of the wise use of peatlands and peat.

Water Diary

SUSTAINABILITY JULY 27-28

The Sustainable Water Resource Conference and Exhibition will be held at the CSIR Convention Centre. *Visit: www.waterresource.co.za*

LIMNOLOGY AUGUST 15-20

The 31st Congress of the International Society of Limnology will be held in Cape Town. *Enquiries: Prof Johan Grobbelaar (Congress Chair), Tel: (051) 401-2263; E-mail: grobbeju.sci@ufs.ac.za or Visit: <http://sil2010.ufs.ac.za>*

SCIENCE AUGUST 31 – 1 SEPTEMBER

The 3rd CSIR Biennial Conference with the theme 'Science: Real and Relevant' will take place at the CSIR

International Conference Centre in Pretoria. *Visit: www.conference.csir.co.za/*

MINE-WATER SEPTEMBER 5-9

The International Mine Water Association's Annual Conference will take place in Nova Scotia, Canada. The theme for the conference is 'Mine Water and Innovative Thinking'. *Visit: www.imwa2010.cbu.ca*

WATER QUALITY SEPTEMBER 5-11

The theme of the 2010 World Water Week in Stockholm, Sweden, is 'The Water Quality Challenge'. *Visit: www.worldwaterweek.org*

SEDIMENTATION SEPTEMBER 6-9

An International Symposium on Sedimentation and Sustainable Use of River Systems will be held in Stellenbosch. *Enquiries: Marechia Basson; E-mail: msb@aspt.co.za; Visit: www.civeng.sun.ac.za/isrs*



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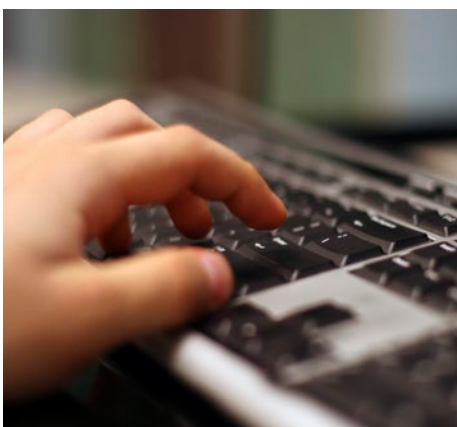
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Freshwater info a keystroke away with new Web resource



A valuable new data resource for freshwater practitioners is now available.

The resource, which takes the form of a Web-based database, 'Biobase', for the first time makes historical freshwater data available electronically in a single catalogue.

Research on the ecological aspects of rivers in South Africa began in the early 1950s and was followed by a number of studies in the following decades,

reports Dr Helen Dallas of the Freshwater Consulting Group (FCG) at the University of Cape Town. "Availability and accessibility of these documented studies are often problematic since much of the early work was published in reports that are not readily available."

Many recent studies use historical data from earlier studies, which enable comparisons of biological and/or physico-chemical data between current and historical conditions to be made and the degree of change in, for example, water quality, to be ascertained. In 1998 a database was developed comprising biological (macroinvertebrate) and physico-chemical data derived from documented studies of riverine ecosystems within South Africa. This first version of Biobase used Microsoft Access 97 as a software platform. Unfortunately, the software became obsolete resulting in the database becoming inaccessible to most users.

The Biobase has now been upgraded to run on the same platform as the

Rivers Database – the national data management and storage facility for river health data collected in South Africa. The Rivers Database was originally developed for the River Health Programme (RHP). "Access to the Rivers Database is free and readily available via registration on the Rivers website (www.riv.co.za/Rivers). Once registered and logged on, users can select 'Biobase' on the menu bar," explains Dr Dallas.

"There is also a user manual available for download from the Biobase menu bar option." The user manual, developed by the FCG and Soft Craft Systems, is also available in hard copy from the Water Research Commission.

The database, which collates a vast amount of information pertaining to riverine macroinvertebrates and physico-chemistry, has several useful applications. These include, among others, deducing ranges of different physico-chemical parameters for different taxa; assessing changes in community structure using

historical records; examining biotope preferences of specific taxa; assessment of water quality guidelines and input into the Ecological Reserve; determination of macroinvertebrate reference conditions; development of conservation targets; and determination of the geographic distribution of taxa.

By linking the two information databases, valuable data in Biobase has now become available to all users. To further enhance the value of the data, Biobase sites within 5 km of RHP sites are indicated in the Rivers Web application. "By combining the entry point for the two databases, both the RHP practitioners and all other water sector contributors will benefit by having access to the Biobase and the vast amount of historical information it contains," says Dr Dallas. "The data in the Biobase are of huge value, particularly as it would be logistically and financially impossible to obtain a similar set of data today," concludes Dr Dallas.

Call for Expression of Interest: WDM Projects

The Water Demand Management (WDM) Programme is hosted by the Development Bank of Southern Africa (DBSA), and supported by the Swedish International Development Cooperation Agency (Sida). The Programme is focused on building a WDM culture in the Southern African Development Community (SADC) region to ensure effective and sustainable use of water that contributes to the SADC goals of regional integration and poverty alleviation.

Support from the WDM Programme will be considered for projects which embody the Programme objectives.

The Programme Implementation Unit (PIU) invites Expressions of Interest (EOIs) for WDM projects.

The EOI should outline the project details, the WDM intervention required, an estimated budget, and proposed time frame.

It should be no longer than 10 pages. There are three fundamental criteria an EOI should exhibit, namely (1) pro-poor impact, (2) cost effectiveness, and (3) demonstration value.

The types of projects the WDM Programme will consider supporting include technical as well as community based projects.

Who should apply?

* Municipalities * Water Utilities * Water Services Institutions, including water user associations and international water management bodies * State owned enterprises * Government departments

Once an EOI is received, an assessment is made by the PIU and a decision is taken, in consultation with the Reference Group (RG), regarding support for implementation. EOI guidelines are available from the WDM Programme website as well as from the PIU. The process is flexible and tailored to each case.

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