Swiss Reach Out to SA Municipalities

The governments of South Africa and Switzerland have signed a R19-million agreement to support local government capacity building in South Africa through knowledge sharing in the water sector.

It is reported that the agreement, which takes the form of a grant of R9,5-million from the Swiss government and a further R9,5-million from the Department of Water Affairs & Forestry (DWAF) will ensure that municipalities are able to learn and access lessons on successful water services provision systems, procedures and operational models. The funds will be utilised for the implementation of the Masibambane project focused on 'Local Government Capacity Building through Knowledge Sharing'.

According to DWAF, the knowledge sharing project, which is a joint initiative of the department, the South African Local Government Association (SALGA), and the Water Research Commission through the Water Information Network, is significant for a number of reasons. "The resources within the project will enable these partners to jointly establish mechanisms whereby good practice, knowledge and information can be accessed and systematically made available to municipalities to enable them to improve the provision of sustainable water and sanitation services in South Africa and beyond the border," DWAF said in a statement.

In addition, the project will directly contribute to the functioning of the SALGA Municipal Water Services Provider Network where experienced and newly established water services providers from metropolitan municipalities, district and local municipalities can come together to learn lessons and to fast track improvements in service provision.

Virtual Discussion List Sparks Interest in Water

A new mailing list has been created to encourage debate among professionals regarding water engineering issues in South Africa and Africa.

The mailing list, dubbed ZA_WATER_ENG can be used to ask questions, hold discussions or disseminate information that is important to the water engineering community. The list is open to all interested parties, including non-engineers, and is being supported by the Water Engineering Division of the South African Institution of Civil Engineering.

Creator Prof Kobus van Zyl, Chair of the Department of Civil Engineering Science at the University of Johannesburg, explains that e-mail discussion lists are 'virtual communities' of people who share a particular interest and use the list to communicate. The list has a central e-mail address where members send their contributions. These contributions are then automatically distributed to all other list members.

Any member can take part in a discussion or simply follow the discussions to stay abreast of developments in the water engineering field. Only members can send

Diary

EARTH OBSERVATION
MARCH 26-28
The first biennial summit of the South African Observation Network (SAON) will be held at Leriba Lodge, Centurion, Gauteng. The summit will provide a forum for stakeholders to contribute to a core Earth observation science plan for the organisation. Enquiries: Karen Bruyere, E-mail: bruyerek@mweb.co.za

DISASTER MANAGEMENT
MARCH 27-29
The Third International Conference on Early Warning will take place in Bonn, Germany. The conference, themed 'From Concept to Action', will focus on selected practical early warning projects. Enquiries: Fax: +41 22 917 0528 & 0563; E-mail: ewc3@un.org; or www.ewc3.org

RIVER HYDRAULICS
APRIL 3-6
The Institute for Water and Environmental Engineering at the University of Stellenbosch is presenting a four-day short course on River Hydraulics, Floods & Stormwater. Enquiries: Marechia Jacobs, Tel: (021) 808-4352; Fax: (021) 808-4351; E-mail: msjacobs@sun.ac.za

URBAN DRAINAGE
APRIL 3-7
The Seventh International Conference on Urban Drainage Modelling and the Fourth International Conference on Water Sensitive Urban Design will be held conjunctively in Melbourne Australia. The joint conference is organised by the Institute for Sustainable Water Resources, Engineers Australia, the International Water Association and the Stormwater Industry Association Australia. Enquiries: UDMandWSUD@icms.com.au; www.icms.com.au/UDMandWSUD

CLIMATE CHANGE
APRIL 20-21
The 17th Global Warming International Conference and Expo will be held in Miami, US. E-mail: gw17@globalwarming.net

AGRICULTURE
MAY 7-10
An international workshop on crop and forage production using saline waters in dry areas will be held in Birjand, Iran. The workshop will broadly address the present trends and advances in production of crops and forage using saline waters,

messages or view the searchable archive.

"We live in a fast changing world where the knowledge base is constantly being enlarged and improved. It is thus essential for engineers and other professionals to continuously update and improve their knowledge to stay abreast of new developments in their fields," explains Prof Van Zyl. "In the past, knowledge was gained from magazines, journals, professional bodies and conferences. However, electronic media have created many new and exciting possibilities for people to communicate."

To join, simply send a blank e-mail to ZA_WATER_ENG-SUBSCRIBE-REQUEST @home.ease.lsoft.com

Students from Namibia and South Africa learning more about the Orange-Senqu basin.

SA's Biggest River Aids Capacity Building

A group of students from South Africa and Namibia have successfully completed a two-week training course focusing on the Orange-Senqu river basin, the most developed transboundary basin in southern Africa.

An initiative between the FETWater programme and the Desert Research Foundation of Namibia, the course was aimed at educating the students on the social, economic and environmental aspects related to the management of water resources. The course was funded by UNESCO and the Flemish government.

According to Dana Grobler, network coordinator of the FETWater Resource Directed Measures network, the experiential training programme created an understanding among the students of the complexities of managing a shared resource such as the Orange-Senqu basin. "Several key sites were visited, including the Lesotho Highlands Water Project, the Tugela-Vaal transfer scheme, the Vaalharts Irrigation Scheme, and water boards such as Rand Water and Bloem Water. At these sites the students gained much information concerning geography, hydrology, infrastructure, management, water users, environmental water requirements, the Reserve and relevant institutions."

Grobler tells *the Water Wheel* that the participants focused on interpreting their learning and understanding to derive a holistic overview of water use and management in the basin. "The Orange and Senqu rivers were identified as an ideal case study which challenged students to understand the complexities in terms of management and operation of such a system to implement environmental water requirements."

The training initiative is part of a broader programme to build capacity in the water sector in South Africa. A similar training course is planned for the Komati River basin which is shared by South Africa, Swaziland and Mozambique.

with particular emphasis on technological innovations in production of salt resistant plants. E-mail: namstct@vsnl.com or apknam@gmail.com

WEATHER
MAY 8-12
The International Conference on the Application of Meteorological Extremes (CAMEX) will take place in Pretoria. Enquiries: Dr Emsie Klopper, Tel: 082 922 8229, Fax: (012) 998 8252; E-mail: emsie@lawwindow.co.za

CLIMATE CHANGE
MAY 10-12
A climate change technology conference with the theme 'Engineering Challenges & Solutions in the 21st Century' will be held in the Ottawa Congress Centre, Canada. The conference is hosted by the Engineering Institute of Canada. Enquiries: Tel: 613-839-1108; Fax: 613-839-1406; E-mail: EICCC2006@ieee.org; Web: www.ccc2006.ca

SOIL CONSERVATION
MAY 14-19
The 14th Conference of the International Soil Conservation Organisation will take place in Marrakech, Morocco. This conference will be a common forum for experts in various disciplines related to sustainable management of soil and water, particularly in semi-arid environment. Enquiries: E-mail: isco2006@wanadoo.net.ma; Web: www.swcs.org/en/international/isco/isco_2006.cfm

WATER MANAGEMENT
MAY 17-19
EnviroWater 2006, to take place in Delft, in the Netherlands, will focus on 'Concepts for Water Management and Multifunctional Land-Uses in Lowlands'. Enquiries: E-mail: Envirwater2006@wur.nl; Web: www.wau.nl/rpv/isomul/envirwater2006

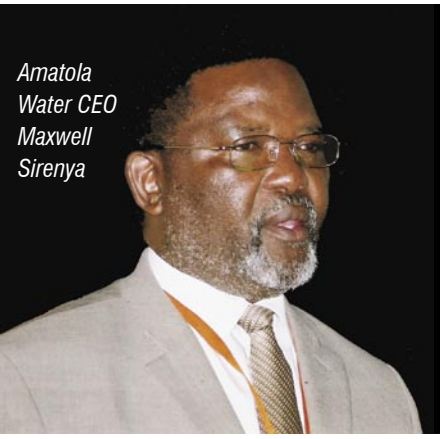
URBAN WATER MANAGEMENT
JUNE 19-23
The Third World Urban Forum, organised by UN-Habitat, will take place in Vancouver, Canada. The overall topic of the event is how to reduce burgeoning poverty in cities, improve the urban poor's access to basic facilities and achieve environment-friendly, sustainable urban growth and development. Web: www.unhabitat.org/2006

Contract to Bring Water to the People

The Greater Tubatse Municipality, in Burgersfort, Limpopo, has launched a R300-million plan to meet critical water backlogs.

Thanks to financial assistance from the Development Bank of Southern Africa, the municipality has signed a contract with bulk water supplier Lepelle Northern Water to help get clean water to the estimated 66% of the 300 000-strong population without access, BuaNews reports.

Greater Tubatse is situated in the arid Sekhukhune district that has four local municipalities. An audit of water infrastructure is being undertaken in the district at present in an effort to determine what more is needed. According to district spokesman Mike Lekala, the exercise will include determining the condition of existing infrastructure such as wastewater treatment plants, as well as the people needed to operate and maintain them.



Amatola Water CEO Maxwell Sirenya

Partnerships Needed to Overcome Water Hurdles

Partnerships between key roleplayers are critical to successfully managing the impact of rapid population growth and urbanisation, two of the greatest challenges facing water services today.

So says Eastern Cape Water Board Amatola Water CEO Maxwell Sirenya. He was speaking at Pan-African Water 2005, held in Midrand at the end of last year. "These roleplayers include the Department of Water Affairs & Forestry, the water boards, the water services authorities (provincial and local government), the private sector and the public," he told delegates.

Amatola Water is the bulk water supplier in the Amathole District and Buffalo City Municipalities. Both these municipal districts have experienced a steady population growth and rapid urbanisation since 1990. In turn, this has a direct impact on the water board in terms of the operation and present infrastructure as well as the planning and development of infrastructure upgrades and new infrastructure.

According to Sirenya, Amatola Water actively pursues relationships with other stakeholders through forums, liaison meetings, service level agreements, and memorandums of understanding, among others. This includes more informal partnerships with the private sector, which he believes does have a role to play, especially in the field of innovation.

Other lessons learnt include integrated capital and operational expenditure planning; the need for asset management strategies that take cognisance of the lifecycle of the infrastructure; accurate population estimates; and the need to create a balance between the developments in the rural and urban economies.

New DG for Science Department

From 1 April the Department of Science (DST) will have a new Director-General in the form of Dr Philemon Mphati Mjwara.

Dr Mjwara joins the DST from the CSIR where he worked as Group Executive: Research & Development. His experience in academia includes serving as professor in science and technology policy at the University of Pretoria and as a physics lecturer at the universities of Wits, South Africa and Fort Hare. He has published numerous papers on physics, technology analysis and technology foresight processes.

Dr Mjwara completed his M.Sc. at the University of Fort Hare in 1987, followed by his Ph.D. at Wits in 1995.

Vaalharts Due for Overhaul

Northern Cape MEC Dipuo Peters has revealed plans to rehabilitate the Vaalharts Irrigation Scheme.

About R300-million will be spent on overhauling the scheme over the next five years. According to the MEC, almost R70-million will be used for the construction of the sub-surface drainage system to address the existing water logging problem, while R230-million will be spent on upgrading the irrigation systems. "We will also continue to work on the development of the Orange River Emerging Farmer Settlement Programme," Peters said in her State of the Province address.

Vaalharts remains the largest irrigation scheme in South Africa, covering 36 950 ha.

Vaalharts, situated in the northeast corner of the Northern Cape bordering the North West was started as an irrigation scheme during the 1930s. It remains the largest irrigation scheme in South Africa, covering 36 950 ha. Main crops include lucern, cotton, maize, ground-nuts, and of late grapes, citrus and pecan nuts, while fruits such as apricots, watermelon, peaches and olives for the export market are on the increase.

Engineering Students Awarded

Several engineering students have been honoured by the Institute of Professional Engineering Technologists.

Rishaal Ramchunder, a student at the Durban Institute of Technology, was awarded the Top Engineering Graduate award for obtaining the B.Tech. Engineering (Civil) degree with an average of almost 90%. In turn, the Top Engineering Graduate Award for a female student obtaining the highest average marks on completion of the B.Tech. Engineering degree countrywide went to Nonthetheleto Moholi from the Vaal University of Technology for her average of 82%.

The Umgeni River before and after being cleared by Working for Water. More than 80% of the river was invaded by water hyacinth.

Weed-free Water for Canoeists

Clearer, cleaner water met the participants of the 55th annual Hansa Powerade Duzi canoe marathon thanks to the efforts of Working for Water (WfW) to clear the river of aquatic alien plantation.

More than 80 km of the Duzi/Umgeni river systems was invaded by water hyacinth, which potentially threatened the safe passage of the estimated 2 000 paddlers. According to WfW, this aquatic weed is the top invasive alien plant in KwaZulu-Natal.

About R1-million has been spent over the last four to five years to clear the infestation through aerial spraying and mechanical control. However, about 75% of this sum has been paid to the contractors and workers drawn from communities that call this river system home. At the time of writing, there were three contractors and 30 workers who had benefited from 1 485 person days of work from this project alone.

Water hyacinth is extremely difficult to control, according to contractor Petros Mbongwe. "The weed doubles in biomass every five to ten days. Thus, if left untreated, the infestations would reach 100% in a very short period." For example, if the infestation is one hectare now, in a week it would be two hectares, in two weeks, four hectares, in three weeks, eight hectares, and so forth. Thus a one hectare patch of hyacinth can reach 32 ha in five weeks.

"Aquatic invasive alien plants are extremely dangerous because they have a negative impact on indigenous plant and animal life. They also create a breeding ground for mosquitoes and bilharzia-carrying snails. If left uncontrolled, they hamper and even prevent recreational sports, such as fishing, swimming and of course even the Duzi," said Abeeda Kadir, the KwaZulu-Natal acting regional programme leader for WfW.
WfW is recognised as one of government's most successful Expanded Public Works Programmes.

Canadian Technology Helps Limpopo Poor

For decades, the residents in and around Letsitele, near Tzaneen in Limpopo, treasured their wheelbarrows as their most prized possessions.

It is with these wheelbarrows that they trekked, something for an entire day, to collect precious water resources. Now through a collaboration between Rotary International and Canadian water treatment firm ZENON, about 30 000 residents in the villages of Mariveni, Mafarana, Mulati, Zanghoma, Sedan and Lefara will have access to potable water for the first time.

The Canadian firm has donated a 0,5 Mℓ ultrafiltration system to clean water for the communities using the company's patented membranes. According to ZENON's website, its membranes are hollow strands of porous polymer fibres that prevent the passage of certain contaminants while permitting water molecules to flow to the inside of each strand.

This selective filtration is possible because the surface of each membrane fibre consists of billion of microscopic pores that block the passage of all particles larger than the size of the pores, creating a physical barrier to contaminants. Water is drawn through the pores with the use of a slight suction, much like that required when sipping liquid through a straw.

Water pipes are also being laid to pipe water to villagers, and the Canadian firm has been training operators from the Greater Tzaneen municipality in the operation and maintenance of its system.

Tzaneen's present water source

Photograph courtesy of ZENON

Regional Support for Science

The African Development Bank will strongly support regional efforts to establish centres of excellence in science and technology, according to bank president Donald Kaberuka. According to Kaberuka, the bank, together with the African Union, New Partnership for Africa's Development, the United Nations Economic Commission for Africa and regional as well as sub-regional organisations, will reinforce measures to reduce the scientific gap that separates Africa from the rest of the world. Efforts will focus on developing infrastructure, strengthening research capacity and promoting innovation and creativity through reinforced public private partnerships.

Meanwhile, individual countries are also increasing efforts to promote science. Malawi has launched a US$8,3-million science plan to develop policies to support research and development and the transfer of technology from developed countries.

In addition, members of the Southern African Development Community have agreed to coordinate their science policies and work together to develop the region's science and technology infrastructure. In particular, the countries will harmonise some of the rules governing how scientific research is carried out, especially customs regulations on the movement of researchers and scientific equipment.

Kimberly Jennings, a BSc (Hons) student at the Department of Soil, Crop and Climate Sciences at the University of the Free State, was awarded the medal for best oral paper by an author under 30 years old at the combined conference of the Soil and Crop Science Societies, held at the University of KwaZulu-Natal Howard College campus in January. Here she is receiving the award from Garry Patterson, President of the Soil & Science of South Africa and Dr Cornie van Huyssteen, acting Chair of the awards committee.

Search for African Research Assistant

Tufts University, and the University of Georgia, both of the US are searching for a Ph.D. student to act as a research assistant in a water management project being undertaken in Burkina Faso.

The two universities, with the support of the International Research Institute for Climate & Society (IRI) and national collaborators have received a two-year grant to design, implement and test a seasonal streamflow forecasting system integrated with a reservoir operation decision support tool (DST) for the Camoe River Basin, in southwest Burkina Faso.

The prospective research assistant will need to hold an M.Sc. in Water Resources Engineering and have knowledge of hydrology and reservoir optimisation modelling as well as be qualified to enrol in the Ph.D. programme in Civil Engineering at Tufts University. There would also be an opportunity to participate in the cross-school, interdisciplinary programme in Water: Systems, Science and Society.

The successful candidate needs to speak and write English well. The focus of the work would be the reservoir DST, however, the person will also be trained in the development of seasonal forecasting tools.

For more information, contact Dr Paul Kirshen at Tufts University, Tel: +1 617 627 5589; Fax: +1 617 627 3994; E-mail: paul.kirshen@tufts.edu

Chinese/Australian Collaboration for Water

China and Australia are creating a joint centre for water research, a fund for scientific cooperation and an exchange programme for young scientists.

According to SciDev.Net, the centre for research on water resources will have branches at the Chinese Academy of Sciences in Beijing and the University of Melbourne in Australia. It will focus on issues such as groundwater management and improving irrigation techniques.

It is reported that Australia will provide US$266 000 over the next three years to employ a senior research fellow who will help develop the centre's joint research programme. China apparently has yet to commit funds to the project.

Under the agreement, Australia's Commonwealth Scientific and Research Organisation and Chinese laboratories will work together directly and seek joint funding from sources outside the two countries. The initiatives highlight the importance the countries attach to scientific collaboration, commented Australian Minister of Science, Julie Bishop.

African Disaster Reduction Programme Planned

Government ministers from 40 countries have agreed on ways to implement a new continental disaster reduction strategy that will also help to eradicate poverty following the first African Union Ministerial Conference on Disaster Risk Reduction.

Africa is reportedly the only continent whose share of reported disasters in the world total has increased over the past decade. Some 20 million people are recovering from such disasters as the earthquake in East Africa, Karthala Volcano eruption in Comores, drought in southern Africa and Niger, and locust invasions in West Africa.

The Africa Regional Strategy on Disaster Risk Reduction is designed to increase political commitment to and public awareness of disaster risk reduction and enhance continental knowledge of reduction methods, reports the United Nations International Strategy for Disaster Risk Reduction. "The strategy will improve the identification and assessment of risks, improve the governance of disaster risk reduction institutions and integrate reduction methods into emergency responses."

Clinging on to This Straw Might Save Your Life

The world is praising the inventors of the LifeStraw, a US$3 personal mobile water purification tool, which should become widely available this year.

Developed by international firm Vestergaard Frandsen, the high-tech drinking straw cleanses surface water and makes it safe for human consumption. It is just 250 mm long and 290 mm in diameter and can be hung around the neck, making it suitable for distribution in disaster areas. It requires no electrical power or spare parts.

The product filters up to 700 ℓ of water removing most of the micro-organisms responsible for causing waterborne diseases. This is done through the use of PuroTech Disinfecting Resin – a patented material which reportedly kills bacteria on contact. The LifeStraw does not remove arsenic, iron, fluoride and other heavy metals.

The product reportedly lasts between six and twelve months before it has to be replaced.

- For more information, visit www.lifestraw.com

Risk Management Discussion on the Cards

The Fourth World Water Forum (FWWF), to take place in Mexico City this month, will seek to identify actions at the local level to prevent water-related hazards turning into disasters.

It is reported that 90% of natural disasters are weather related, with 71% of deaths caused by natural disasters being due to extreme hydrometeorological events.

Consequently risk management will form the basis of discussion at 30 sessions of the FWWF. During these sessions, topics such as flood management, social vulnerability, dams and watersheds will be dealt with, among others.

Specifically, the forum will underscore the fact that preventative financing is eight times more cost-effective than the budget allocated for rescue and recovery. Attention will also be drawn to the fact that there are indicators that governments around the world are moving away from investment in the monitoring network on water-related hazards.

Human Waste Can Make Plants Sick

A study, published in the January issues of international journal *PloS Biology*, has showed that faeces from healthy humans contain live viruses, most of which are plant viruses that could sicken and deform plants.

Greywater, sometimes used for irrigation, may also contain these viruses, according to the investigation conducted by the San Diego State University, in the US. However, future studies are required to determine if such water can infect plants.

The researchers say the viruses humans pass probably do not harm us and airborne transmission is unlikely. Instead, the viruses probably hitch a ride through the human body via food, even when the food is cooked or dried.

- To access the journal go to http://biology.plosjournals.org

World Snippets

- A new **climate model** developed by the US National Oceanic Atmospheric Administration shows a dramatic drying of the Sahel region during the next 50 years because of climate change. This refutes other forecasts which expect the region, which stretches from Senegal to Somalia, to become wetter.
- A **new fund** has been established to assist African ecologists. The British Ecological Society's Capacity Building for Ecology Fund has committed US$880 000 for the first five years.
- Last year witnessed the largest financial losses ever as a result of weather-related **natural disaster** linked by many to human action, more than US$200-billion compared to US$145-billion in 2004, the previous record, according to statistics presented to the United Nations Climate Change Conference meeting in Montreal, Canada. The year 2005's figures, partly as a result of the highest number of hurricanes ever seen since records began in 1850, are part of a climbing trend being linked to many in the industry with climate change.
- China's **Three Gorges Dam**, the largest hydroelectric power project in the world, is to be completed by May, three months ahead of schedule. The project, which was launched in 1993 in the middle reaches of the Yangtze River, will have cost US$22-billion, and required 16 million cubic metres of concrete, the Xinhua news agency reports.

SA/Dutch Partnership Snatches Ghana Contract

Rand Water Services, the newly-established business arm of South Africa's largest water utility is growing its portfolio following its appointment, along with Dutch company Vitens, to manage Ghana's urban water supply.

The two public-owned water utilities snatched the five-year contract to manage the Ghana Water Company Limited (GWCL) from under the noses of several large international water companies. Under the contract the Ghanaian government remains the owner of all water treatment and reticulation infrastructure.

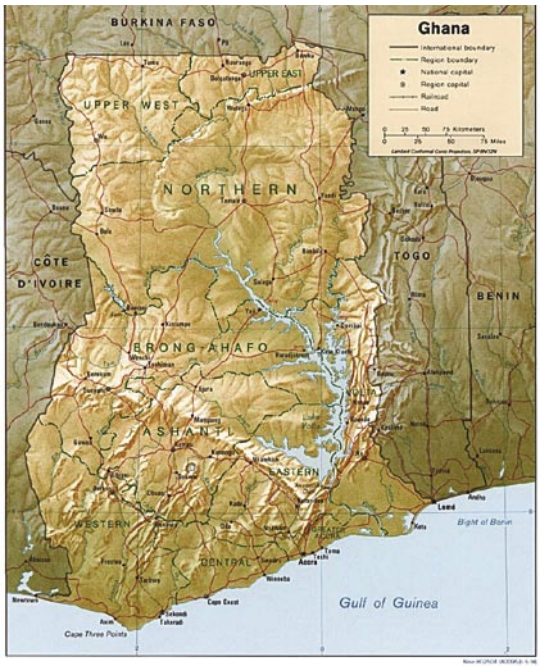
At present parastatal GWCL manages the water systems in about 80 larger towns and cities in the country serving between six and seven million people. According to Prof Clement Dorm-Adzobu, chair of the Ghana Water Resources Commission, the company has experienced problems in terms of poor service provision, cost recovery and weak capacity of operations and maintenance. This is mainly due to inherent institutional and organisational problems. As in many developing countries, the poor, who mostly rely on private water vendors, pay much more for their water than those connected to a water reticulation system.

"The official coverage figure for urban water supply is 70%, however, it is estimated that only about 40% of those connected enjoy regular supplies, Prof Dorm-Adzobu told delegates at Pan-African Water 2005, held in Midrand at the end of last year.

Now the Ghanaian government has received a grant from the World Bank totalling US$103-million, as well as US$5-million from the Nordic Development Fund to improve the situation through the Ghana Urban Water Project. The government is also expected to contribute US$12-million.

Thabani Myeza, head of business development at Rand Water Services, tells *the Water Wheel* that the management contract spells out all the deliverables by the operator. Key to these is the control of water flows, water pressure, water quality and better management of revenue collection. "Initial focus therefore will be on limiting water losses and improving revenue collection. Thereafter plans will be put in place to ensure that paying customers are receiving reliable service."

The main objective of the management contract is to improve levels of service, reduce non-revenue water, while improving water quality and extending services to under-serviced areas. "Our aim is to meet and hopefully beat these service requirements, but also to improve the financial standing of the GWCL while putting sustainable systems and processes in place," reports Myeza.



Rand Water Services and Vitens will be contributing equally to the management contract, each bringing its own expertise. According to Myeza, the expertise of both parties is, for most part, complementary. At operational level the South African firm brings excellent skills in the area of water abstraction, purification and pumping. On the other hand, the Dutch company brings water

reticulation and customer management expertise to the table.

Previous efforts by the Ghanaian government to include private company involvement in restructuring the GWCL have been met by public disdain and regular protests. Yet, the present management contract seems to have been approved. "To date the level of resistance we have seen is minimal, and limited to small sectors of the community. On the whole we believe the project is acceptable to the vast majority of Ghanaian communities," notes Myeza. "In fact, most civil groups were present at the signing ceremony and were widely consulted on social issues around this initiative." He points out that, as part of the contract, the project team plans to work closely with the affected communities in ensuring that its plans are communicated properly.

At the time of writing, a small team was being deployed to Ghana to start ground preparations, however, full-scale rollout is only due after final contract negotiations have been concluded.

SA Shows Thailand How it's Done

South Africa is providing Thailand with assistance regarding water demand management.

Local company WRP is part of an international consortium which won the contract to upgrade the water network in Bangkok and introduce water demand management in the Thai capital. The Metropolitan Water Association (MWA) supplies water to 14 million residents in southern Thailand.

The US$75-million total contract was won against most of the large water companies in the world, including Thames Water, Binnie Black & Veitch and Dorsch Consult. WRP's role is to provide training to senior management of the MWA as well as specialist ad hoc support to the project team over two years.

"For the South African water industry this is a great compliment as it demonstrates that our experience is both valued and recognised abroad," Ronnie McKenzie, MD of WRP tells the *Water Wheel*.

A number of MWA employees have already completed their training in South Africa. According to McKenzie there was some surprise from the trainees as to the sophistication of South Africa's water systems – many of which are of First World standard.

***Top**: The Thai delegation who attended a course on water demand management in South Africa.*

***Left**: Governor of the Thai Metropolitan Water Association, Santi Somboonviboom, receives his training certificate from Ronnie McKenzie, MD of WRP.*

Market News

- **Barloworld Robor Tube** division is marketing a new patented steel pipe which eliminates the need for a socket. Each pipe is reportedly designed with one end flared and internally threaded, while the other end is externally threaded.
- **Rand-Air**, subsidiary of Atlas Copco, has been selected as the preferred supplier for the Berg River Project Joint Venture, in the Western Cape. The firm's Cape Town depot is reportedly supplying the contractors constructing the dam with 90% of the power and compressed air needed on site.
- **Denorco** has delivered 37 Tsunami axial flow pumps to the River Nile State in Sudan, in a project that will see the transformation of 50 000 ha of arid desert into arable farmland in the biggest flood irrigation project on the continent. This R40-million pump order received is believed to be the biggest ever pump order from South Africa into Africa.
- **Biwater** has reportedly instituted arbitration proceedings against the Tanzanian government. This is after the government terminated a ten-year water privatisation contract on the grounds that the UK water company had allegedly failed to make the required investment to improve services in Dar es Salaam.
- With the introduction of the RMM621 compact DIN rail mounted device, **Endress+Hauser** now offers the possibility of universal pump control, which includes remote transmission of counters and alarm conditions. The modular plug-in card concept allows for flexible adaptation of the unit to the individual requirements from wastewater treatment plants, water plants, breweries and pumping stations.

World Dams Fail to Make the Grade

Five years on from the launch of the World Commission on Dams (WCD) report dams are continuing to cause excessive social and environmental damage.

So says the World Wildlife Fund (WWF) in a new report, *To Dam or not to Dam? Five years on from the WCD.* The report shows that while dams undoubtedly have a role to play in meeting growing energy and water needs, there is also much at stake as in the past too many projects have resulted in excessive damage to the environment and local societies.

It is reported that already 59% of the world's large river systems are fragmented by dams. The Millennium Ecosystem Assessment found that the amount of water impounded behind dams quadrupled since 1960, and that three to six times as much water is held in reservoirs as in natural rivers.

Yet, dam construction continues at a rapid pace, particularly in the developing world where growth of water and electricity demand is strongest. China, Iran and Turkey lead in the construction of large dams, although industrialised Japan is not far behind. According to the report, close to 400 large dams over 60 m in height are under construction worldwide at present.

"This is not the engineering heyday of the 1950s when dams were seen as the hallmark of development. We know dams can cause damage and we must put this knowledge to work," says Jamie Pittock, head of WWFs Global Freshwater Programme. "Governments along with the World Bank must insist that the WCD's recommendations are applied to all dam projects now."

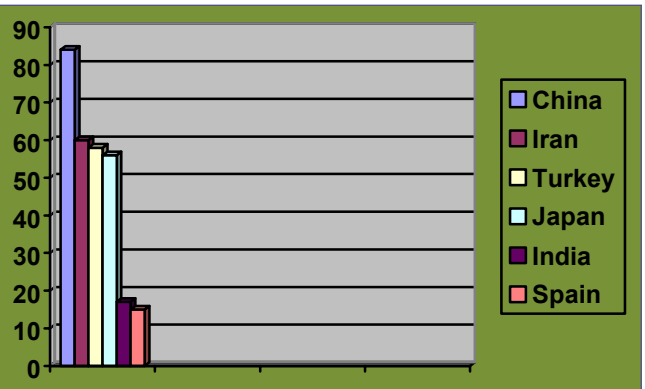
Case studies in the WWF report from, for example, Turkey, Iceland, Spain, Australia, show that there are still numerous examples of individual dam projects that fail to meet one or more of the WCD strategic priorities. In particular, there appears to be a failure to undertake comprehensive needs and options assessments. Furthermore, environmental impact assessments are often inadequate.

The WCD recommendations are aimed at ensuring that dams are economically and environmentally sustainable, by ensuring that construction plans are given public approval, comprehensive assessments of other options are made and that the economic benefits of any dam are shared with local communities. South Africa is one of the few countries which has embarked on a comprehensive follow-up process to the WCD report. In a three-year process, a multi-stakeholder committee led the South African process to recommendations for changes in policies and procedures.

"Bad dams and bad economics are apparently still alive and kicking five years after the WCD," says report author Ute Collier. "As the energy and water crisis tightens we need to ensure that we choose the solutions with the least environmental damage and the greatest social benefits."

♦ To access the report go to www.panda.org/dams

2005 Dams under construction (>60 m) by the world's biggest dam building nations.



Source: International Journal on Hydropower and Dams

Water on the Web

www.globalwaterintel.com – *Global Water Intelligence* is a monthly, 32-40 page newsletter delivered electronically and in hard copy format providing analysis and strategic data on the international water market. An interesting site it offers, among others, analysis of current trends, and a project tracker. The downside is one has to be a subscriber to access any information.

www.peopleandplanet.net – Online magazine *People and Planet* provides a global review and Internet gateway into the issues of population, poverty, health, consumption and the environment. It is published by Planet 21, an independent non-profit company and a registered British charity recognised by the United Nations.

www.reservoir.co.za – This website is dedicated to Catchment Forum activities within the Upper Vaal Management Area. Managed by Rand Water, the site provides a platform for water quality information for all interested and affected parties within the Upper Vaal.

www.wmo.ch/index-en.html – This is the official site of the World Meteorological Organisation, a UN specialised agency focusing on weather, climate and water. Although the site appears a bit busy at times, this is a good place to start if you are interest in what is happening in the atmosphere.

www.wri.org – Based in Washington, the World Resources Institute is an environmental think-tank that goes beyond research to find practical ways to protect the earth and improve people's lives.

Save Traditions, Save Wetlands

South Africa's wetlands can be conserved by preserving the way they are perceived culturally and socially.

So says national training and development coordinator for the Working for Wetlands programme, Mandisa Mangqalaza. She was speaking at the National Wetlands Day celebrations at the Pretoria Botanical Gardens. The theme for this year was 'In the Face of Poverty, Wetlands are a Lifeline.'

Wetlands are among the most productive ecosystems on earth, however, they are decreasing rapidly, plunging the millions of vulnerable people that depend on their life-support systems, into poverty.

"…. cultural practices are fast disappearing and, with them, the traditional respect for wetlands"

Mangqalaza said that wetlands were traditionally revered in several local cultures. "By rekindling these traditional values and indigenous knowledge we can begin to conserve our precious wetlands."

Wetlands are essentially the transition or meeting place of land and water. It is said that for many indigenous cultures, wetlands thus represent the transition between the material and spiritual world where one's ancestors have a central place. For this reason, wetlands have historically been heavily guarded. It was believed that the wetland had to be kept in good condition to avoid the wrath of the ancestors.

"Today, research tells us that there are practical reasons why we must protect wetlands; they reduce the effects of floods, and are natural water purifiers, but the end result – the fact that we need to conserve them – remains the same."

Apart from being religious sanctuaries, wetlands are also an essential source of products for food and medicine. For example, the river pumpkin or *Gunnera perpensa*, has traditionally been used to ease childbirth and promote the expulsion of after-birth in humans as livestock. Other wetland plants, such as amadumbe (African potato) and waterblommetjies are used in food dishes.

Sedges cut from wetlands are used to weave sleeping mats or beer strainers. These traditional mats are also an essential item used by many traditional healers as it is directly linked to water, healing and creation. Sleeping mats are also customary gifts from the bride to the groom's family in traditional Zulu marriage settlements.

Today, these cultural practices are fast disappearing and, with them, the traditional respect for wetlands.

Mangqalaza maintains some of these traditional beliefs need to be reawakened. "When developing wetland management plans the cultural aspects must not be forgotten," she said. "They may be extremely valuable tools for achieving wise and sustainable use of wetlands."

World Wetlands Day

World Wetlands Day is celebrated each year on 2 February. It marks the date of the signing of the Convention on Wetlands on 2 February 1971, in the Iranian city of Ramsar. The day was first celebrated in 1997.

Did you know?

The isiZulu word for 'wetland' is 'ixhaphozi', from the isiZulu, 'xha', the word given to the squelching sound made by cattle as they pull their hooves out of the mud.

Source: Working for Wetlands

Wetlands at a glance

- Wetlands ecosystems are estimated to cover more than 1 280 million hectares globally – an area 33% larger than the United States.
- Wetlands deliver a wide range of ecosystem services that contribute to human well-being.
- Water supply, water purification, climate regulation, flood regulation, coastal protection, recreational opportunities are all performed by wetlands.
- The degradation and loss of wetlands is more rapid than other ecosystems on the planet.

Source: WWF

Fighting Poverty Through Sanitation

A new government initiative, which combines the provision of sanitation with job creation, has been launched in Limpopo.

The National Sanitation Job Creation Programme is an initiative of the Department of Water & Forestry (DWAF), working in collaboration with the Labour Job Creation Trust, the South African Local Government Association, Umsobomvu Youth Fund, Development Bank of Southern Africa as well as the departments of Public Works (DPW) and Provincial and Local Government.

The programme follows a National Sanitation Job Creation Seminar held in mid-2005, attended by several stakeholders, in which guidelines to accelerate job creation through sanitation provision composed, reports George Tsibani, DWAF Deputy Director: Capacity Building and Training. "The provision of basic sanitation remains a priority for the South African government as it strives to eliminate the backlog of about 16 million people still lacking access to safe sanitation by 2010. At the same time, an estimated 72% of South Africa's total population of poor resides in rural areas, which are also the biggest target for sanitation delivery. Through this initiative, which will be executed as part of the Expanded Public Works Programme (EPWP), we hope to alleviate poverty by providing essential services and creating jobs to needy communities."

Tsibani adds that the aim of this initiative is not to replace present programmes, but to enhance their effectiveness and impact (particularly at local level) by introducing strong coordination and advocacy functions, and by paying more attention to capacity building, job creation and community involvement. Towards the end of last year a pilot initiative was launched by DWAF Minister Buyelwa Sonjica at Mawa Village, outside Tzaneen, in Limpopo. She said: "Our principal task in the medium term points to the need for attacking poverty in delivering sustainable sanitation as funded under the Municipal Infrastructure Grant and the Provincial Infrastructure Grant using EPWP indicators."

"The provision of basic sanitation remains a priority for the South African government"

Further pilot projects are to be negotiated with interested water services authorities. In this regard, DBSA has made significant progress with the support of the North West Legislature using the Sanitation Job Creation Municipal Guideline.

In addition, DWAF, with its strategic partners, will be rolling out this guideline to more than 170 water services agencies and new municipal agencies after March as part of the EPWP programme. At the time of writing, DWAF and DPW were finalising preparations for the rollout of this project.

Minister of Water Affairs & Forestry Buyelwa Sonjica at the National Sanitation Job Creation Programme launch in Limpopo.

Water by Numbers

- **10%** – The percentage of the world's crops being irrigated with sewage, often untreated.
- **15 000** – The number of civil engineering professionals in South Africa at present. According to a new report from the South African Institution of Civil Engineering, the country will need an additional 1 500 to 4 000 civil engineers over the next ten years to cope with the growing pipeline of large projects.
- **R218-million** – The funds approved by Mandela Bay municipality to eradicate the bucket system. At present there are more than 22 000 bucket latrines in use within Mandela Bay, which the authority hopes to eradicate by 2008 in a programme to start in April.
- **30-40 Mℓ** – The volume of raw sewage that was released into the Nsikazi River, a tributary of the Crocodile River, after two ponds collapsed in KaBokweni near White River, in Mpumalanga. The Crocodile River runs through the municipal areas of Mbombela and Nkomazi, the Kruger National Park, and into neighbouring Mozambique.
- **98%** – The percentage of City of Johannesburg residents who have access to a reliable water supply, according to mayor Amos Masondo.
- **600 t** – The volume of water hyacinth removed every day from the Kagera River before it enters Lake Victoria.
- **100 t** – The volume of benzene that spilled into the Songhua River, a tributary of the Amur, which runs along the China-Russian border, after an explosion at a Chinese factory.
- **2007** – The new target date set by the South African government for the elimination of the bucket toilet system.
- **R12,5-million** – The money owed to Johannesburg Water by 99 schools in the city. The utility has threatened to cut off supplies to the schools and take legal action unless there was a firm commitment by the province to pay the outstanding money.
- **50 000** – The number of mathematics and science graduates aimed for by government by 2008.