State of national assets 'concerning'

Minister of Water Affairs & Forestry Lindiwe Hendricks has expressed concern over the present state of some of the assets being transferred from the national department to local and district municipalities.

The transfer process is part of the national department's transition from an implementing organisation to a regulator within the water, sanitation and forestry sectors. Speaking to the press after her first 90 days in office, Hendricks said that agreements with regards to the transfer of assets had been signed with most Water Services Authorities, while the transfer of operations personnel was in progress. The entire transfer process is expected to be completed by the end of this year.

Hendricks said her attention had been drawn to the unsatisfactory status of some of these assets. Earlier this year (March/April 2006 issue), *the Water Wheel* reported on concerns regarding the operation and maintenance of the country's water and wastewater infrastructure, including those historically managed by the Department of Water Affairs & Forestry.

In 2003, 1 544 departmental schemes valued at R9,95-billion were surveyed as they were being prepared for transfer to local government. While the vast majority of the schemes were working, some rehabilitation was needed, 40% because of normal ageing,

19% due to vandalism, and 18% because normal maintenance had not been undertaken.

"This issue has been discussed with executive management, and the budget is certainly available to do the necessary repairs," Hendricks told *the Water Wheel*. "Being the national department, and therefore, being likely to have more skills and expertise available, we need to ensure that these assets are in perfect working condition before being transferred to provincial and/or local authorities."

Apart from the transfer of schemes, Hendricks said she was committed to driving the process of restructuring of the department through the establishment of the National Water Resources Infrastructure Agency, and catchment management agencies. "I hope to leave behind a lean and mean and much smaller department that is clearly focused on its role as sector leader for forestry and water, and its role as regulator and supporter of other institutions in these sectors."

Kudos for DWAF engineer

Kelvin Legge, an engineer with the Department of Water Affairs & Forestry, has scooped an international award for his contribution to the expansion of technology.

Legge, who lost part of his sight in 1992 when he was exposed to toxic waste which had contaminated the soil he was working with, was bestowed the award at the General Assembly of the International Geosynthetics Society in Yokohama, Japan. He is reportedly the first South African to receive this award in the field of civil and environmental engineering.

What drew the international community's attention is Legge's design theory in the use of plastic filter materials in earth embankment dams. He also invented a solution to improve the performance of contaminant containment barriers, such as those found at the bottom of landfills and hazardous waste sites.

R10-m for science internships

The Department of Science & Technology has set aside R10-million in a joint internship programme designed for science, engineering and technology graduates. Government news agency BuaNews reports that the department has partnered with the National Research Foundation in this initiative to bridge the gap between theory and actual workplace requirements. Graduates are assisted to raise their employability through mentoring and coaching.

The department said it intended to increase the pool of human resources available to science councils, science institutions and the National System of Innovation, while responding to national priorities. It also aimed to provide university graduates with various areas of specialisation.

Finnish-SA science agreement signed

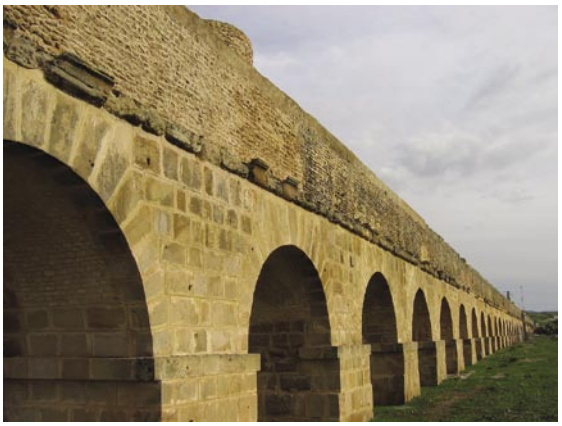
South Africa and Finland have agreed to develop a cooperation framework programme with the overall objective of strengthening the national system of innovation.

The programme will run for 30 months with a total budget of €4-million, reports government news agency BuaNews. The aim is to have a national coordination mechanism, linked to a regional network to enable the delivery of support services for science parks and centres of excellence.

According to the Department of Science and Technology (DST), this will enhance provincial innovation systems as well as pilot innovation systems in rural areas. This will take place through activities like training, workshops and networking among the stakeholders at national and provincial level with targeted interventions. According to the agreement, the DST will be the lead agency with assistance provided by the Embassy of Finland.

It is understood that the programme will also foster collaboration and the exchange of expertise between South Africa and Finland.

Study looks at Roman water law



The Water Research Commission has published a new report following a study of Roman water law, with specific reference to water allocations and prior appropriation.

The study was aimed at determining whether Roman law could provide some guidance for water law and water allocations in South Africa.

Author Alewyn Burger reports that the principles of Roman law were developed over a long period in the vast Roman Empire, which covered a number of different countries with widely different climates. Subsequently, the law of all European, and many other countries (including South Africa) grew out of Roman law. "Before a law has withstood the test of years of practice, one cannot say whether it is a successful law or not. The Roman interdicts offer practical, tested guidance for resolving conflicts arising in water-stressed situations typical of arid and semi-arid areas."

It is reported that Roman law is the most important and influential collection of secular legal materials the world as ever known. According to Burger, this makes the body of Roman water law worthy of attention and further study for application in South Africa, particularly as the country approaches full-scale implementation of the National Water Act.

- To order the report (WRC Report No **TT 297/06**, contact Publications at Tel: (012) 330-0340 or E-mail: orders@wrc.org.za)

Boost for aquaculture through new policy

The Department of Environmental Affairs & Tourism (DEAT) is finalising a policy on aquaculture in an effort to grow this sector in South Africa.

Aquaculture is one of the fastest growing food production systems in the world. Over the past 15-20 years it has developed into a global industry with over 60 countries engaging in the production of more than 250 species of fish, shellfish, crustaceans and aquatic plants.

Despite this phenomenal growth in global aquaculture, South Africa's contribution has remained low, accounting for less than 1% of African aquaculture production. In addition, the sector is dominated by large commercial enterprises. Through the Policy for the Development of a Sustainable Aquaculture Sector in South Africa, the government hopes to accelerate delivery of a bigger and profitable aquaculture sector in an environmentally sound manner.

A workshop engaging various stakeholders, including legislators, researchers, industry, labour, other national departments and provincial and local government, was held in September to share insights that would assist in mapping out the future agenda for aquaculture development in South Africa.

The draft policy is undergoing final stages of comment and stakeholder input at present. DEAT will further develop and implement a sector development plan that will be driven by a dedicated aquaculture unit.

Delta Building
471 Monica Rd
Lynnwood

PO Box 35423
Menlo Park
0102

Tel: (012) 470 9290
Fax: (012) 348 4506
Email: info@tidasa.co.za
www.tidasa.co.za

Tidasa
Training and Instructional Design Academy of South Africa

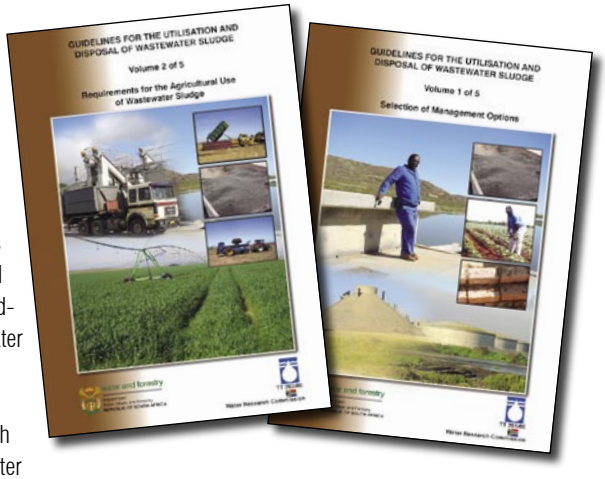
Our clients include:

- *DWAF*
- *IUCN*
- *NDoT*
- *KZN DoT*
- *STATS SA*
- *Environmental consultancies*

We are the best in the field of:

- *Training & capacity building frameworks*
- *Customised, client specific learning material*
- *Systems development and training*
- *Workplace Skills Plans*
- *Public participation process support*
- *Workshop facilitation*

Help for authorities to manage sludge



Sludge produced at a wastewater treatment works can be regarded as the pollution removed from the water in a concentrated form. Correct management and disposal of this sludge is thus crucial to avoid potential contamination of the surrounding environment and fresh water rivers and streams.

The Water Research Commission initiated research to characterise local wastewater sludges and to develop a better understanding of sludge disposal practices that could form the basis for a comprehensive revision of the 1997 Guideline documents pertaining to the use and disposal of sewage sludge.

The result is the publication of two volumes of a planned five-volume series. The *Guidelines for the Utilisation & Disposal of Wastewater Sludge* are aligned with international trends and local knowledge gleaned over the past five years.

The first volume provides guidance on the selection of management options while the second volume outlines requirements for the agricultural use of sludge. The remaining volumes, which are in the planning stages at present, will deal with requirements for on-site and off-site disposal of sludge, the beneficial use of sludge, thermal sludge management practices and commercial products containing sludge.

It is reported that the Guidelines were developed so that regulatory authorities, managers, practitioners and operators responsible for sludge management could easily understand them.

- To order the first two volumes, *Selection of Management Options* (WRC Report No: TT 261/06), or *Requirements for the Agricultural Use of Wastewater Sludge* (WRC Report No TT 262/06), contact Publications at Tel: (012) 330-0340 or E-mail: orders@wrc.org.za

Water on the Web

www.africanwater.net
This website is dedicated to a two-year project funded by the European community to increase the involvement of African researchers in the water-related components of the European Union Framework Programme 7 (FP7). The website provides African specific information about participation in FP7; newsletters and electronic news bulletins; training courses for water researchers in Africa on how to succeed in FP7; and promotion of partnerships between EU and African water research communities.

www.econologica.com
This website is dedicated to ecological designs and solutions for low-cost pumping and transport. This includes the yardpump, Flutterwell pump, Cottage pump and Flo' pump. It provides a short description of the device, troubleshooting, and explanatory photographs and video-clips.

www.waterintegritynetwork.net
The Water Integrity Network (WIN) stimulates anti-corruption activities in the water sector worldwide. The network promotes solutions-oriented action and coalition-building between civil society, private and public sectors, media and governments, and advocates a range of anti-corruption activities.

Water by Numbers

- **63 602** – The number of remaining buckets that will be eradicated by December, according to Minister of Water Affairs & Forestry Lindiwe Hendricks.
- **8,8%** – The rate of rise in the price of potable water in South Africa, according to international firm NUS Consulting. South Africa had the fourth-lowest water tariffs out of 14 countries surveyed.
- **R15-million** – The fine payable by Italian construction firm Impregilo after it pleaded guilty to charges of attempting to defeat the ends of justice. It is the fourth company to be prosecuted and found guilty by the Lesotho High Court of corruption and paying bribes to secure contracts in the Lesotho Highlands Water Project.
- **129 400** – The estimated number of people relocating to Cape Town between 2001 and 2006, many of them to informal settlements outside the city.
- **581** – The number of students supported by Water Research Commission funded projects during the past financial year. About 69% of these students are from historically disadvantaged backgrounds.
- **80%** – The estimated percentage of sewage from Ghanian capital Accra that flows untreated into the ocean.
- **US$4-billion** – Estimated annual sales of the US bottled water industry.
- **US$90-billion** – Estimated annual global investments in public water supplies.
- **20** – The percentage of the world's freshwater supply that is in Canada, which has banned bulk exports of water.
- **75%** – The percentage of Namibian citizens who have access to potable water.
- **18-million** – The estimated number of people affected by China's worst drought in 50 years.
- **92%** – Present average dam levels in South Africa following recent rains. Levels recorded in each provinces are Eastern Cape 89%, Free State 96%, Gauteng 99%, KwaZulu-Natal 85%, Limpopo 72%, Mpumalanga 93%, North West 74%, Northern Cape 101%, and Western Cape 85%.

Changed Attitude Can Feed More With Less

There is enough land, water and human capacity to end hunger and protect the environment over the next 50 years if "radical action" is taken today.

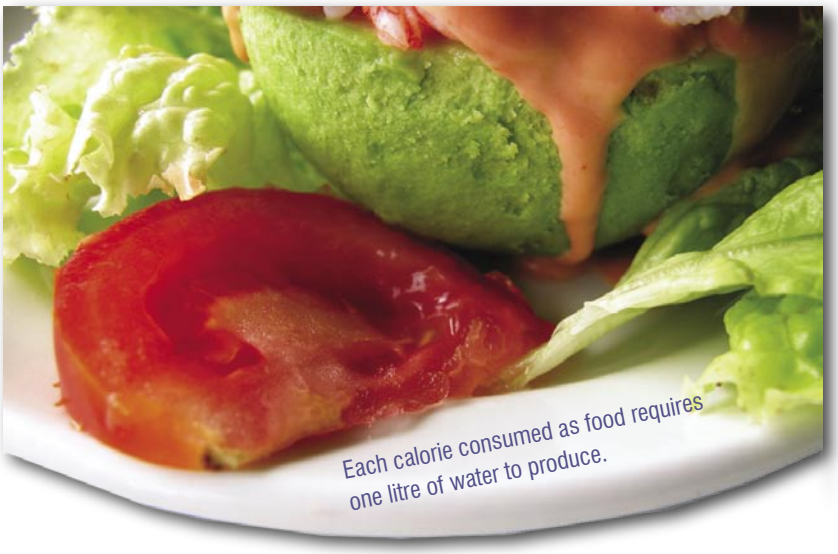
So say the authors of the *Comprehensive Assessment of Water Management in Agriculture,* which was launched in Stockholm during World Water Week. The Assessment, reportedly the first of its kind, critically examined policies and practices of water use and development in the agricultural water sector over the last 50 years. About 700 researchers took part in the project. It was co-sponsored by the Consultative Group on International Agricultural Research (CGIAR), the United Nations Food and Agriculture Organisation, the Ramsar Convention on Wetlands and the Convention on Biological Diversity in a bid to find solutions to the challenge of balancing water-food-environment needs.

Total water withdrawals are estimated at 3 390 km^3, with 2 490 km^3 (or 74%) for agriculture, mostly irrigation. As a rule of thumb, each calorie consumed as food requires one litre of water to produce.

In sub-Saharan Africa, withdrawals are only a tenth of those in First World countries, with little water developed for agriculture. But, according to the Assessment, the variation is huge. In the Zambezi basin less than 1% of the total water resources are withdrawn for human purposes. In the Limpopo basin, on the other hand, most water is allocated, and the basin is closing.

According to the authors, a quarter of the world's population live in river basins where water is physically scarce – water is overused and people are affected by environmental consequences from falling groundwater levels to dying rivers that no longer reach the sea. Another one billion people live in river basins where water is economically scarce – water is available in rivers and aquifers, but the infrastructure is lacking to make this water available to the people.

The scientists warn that if nothing changes, in 2050 the agriculture sector will need to double the amount of water to grow the food we eat. But with appropriate action, total growth in water use could slow down by 50% and water withdrawals from rivers could stabilise.


Each calorie consumed as food requires one litre of water to produce.

Speaking at the launch, David Molden, who led the Assessment said: "To feed the growing population and reduce malnourishment, the world has three choices: to expand irrigation by diverting more water to agriculture and building more dams (at a major cost to the environment); expand the area under rain-fed agriculture at the expense of natural areas; or do more with the water we already use. We must grow more crop per drop, more meat and milk per drop and more fish per drop."

Africa's savannahs – which have the most of the world's poorest people who typically rely on rain-fed agriculture – are singled out by the Assessment as holding the greatest potential for increasing water productivity, and increasing agricultural yields per unit water used.

The Assessment recommends a radical new agenda for agricultural water management – one that prioritises obtaining the maximum social, environmental and economic value out of every drop of water. Main points outlined in the report include:

- **Think differently about water**
  "The prevailing attitude of the last 50 years has been that water is a free, renewable resource and that the main challenge is to capture it and make it available to people without regard to the environmental consequences," said Molden. "This agenda urgently needs to be replaced by awareness that there is no more 'new' water."

- **Get water to poor people**
  Providing access to water for productive purposes to smallholder farmers in marginal or vulnerable areas through affordable small-scale technologies, such as treadle pumps and micro-drip kits, is a proven strategy to fight poverty, the authors point out. This, combined with micro credit and access to markets can provide additional income up to several times the investment cost in a single year.

- **Increase water productivity**
  Future improvements in water productivity at the farm level are expected to come primarily from a combination of smart field practices, using techniques from 'conservation tillage' and 'land levelling' to improved irrigation scheduling, with a potential breakthrough possible in the breeding of drought-resistant crop varieties.

- **Consider a continuum of options for agricultural water management**
  The new approach to water for agriculture recognises that the greatest potential for improving yields is in the grey zone between rain-fed and irrigated systems, i.e. supplementing irrigation to rain-fed systems through rainwater harvesting.

- **Managing agriculture for multiple ecosystem services**
  The report advocates multiple use of

water. For example, multi-functional rice fields can grow rice, fish, ducks, frogs and edible snails, thus generating livelihoods for small farmers while supporting high biodiversity and better soil erosion control.

- **Reform the State to improve the governance of water**
  Governments will need to enable water to be re-allocated from lower to higher-value uses, including transfers from agriculture to cities and industry; provide incentives for water conservation; set and enforce water quality standards; and establish and implement systems of water (use) rights or entitlements.

- **Deal with trade-offs and difficult choices**
  According to the researchers, there is a lot that can be done to relieve the problems of scarcity, but, in reality, there will be a lot of hard choices about water that need to be made – often creating winners and losers. Usually, the losers are the poor farmers, livestock herders and fishermen. What are needed are more informed negotiations where all these stakeholders are brought to the table.

Water Diary

WATER & FOOD
NOVEMBER 12-17
The International Forum on Water and Food will be held in Vientiane, Lao PDR with the theme, Synthesising Knowledge on Livelihoods, Water, Food and the Environment. *Visit:* www.waterandfood.org

WATER IN MINING
NOVEMBER 14-16
Water in Mining 2006, with the theme Multiple Uses of Water, will be held at the Sofitel Hotel, in Brisbane, Australia. *Enquiries: Donna Edwards; Tel: +61 3 9662 3166; E-mail:* dedwards@ausimm.com.au *or Visit ausimm.com*

EDUCATION & TRAINING
NOVEMBER 15-16
The Second Annual ESETA Conference & Exhibition will be held at Kopanong Hotel & Conference Centre, Benoni. The theme is 'Energy and Water: Essential for the South African Economy'. *Enquiries: Taryn, Scatterlings of Africa, Tel: (011) 563-5085; E-mail: Conference@soafrica.com*

SANITATION
NOVEMBER 16-18
The World Toilet Expo and Forum will take place in Bangkok. *Web:* www.worldtoiletexpo.com/home

AGRICULTURE
NOVEMBER 20-23
The Innovation Africa Symposium will convene a group of internationally recognised experts on innovation systems in Kampala, Uganda, to share their latest thinking with agricultural researchers and development partners. *Enquiries: Dr Susan Kaaria, Rural Innovation Institute; Tel: +256 41 567 804; Fax: +256 41 567 635; E-mail:* s.kaarla@cgiar.org

INDUSTRIAL EFFLUENT
NOVEMBER 22-24
An industrial effluent management conference with the title 'Best Practices of Wastewater Treatment to conform to DWAF Standards' will be held at Southern Sun, Johannesburg International. *Enquiries: Tel: (011) 771-7000; Fax: (011) 880-6789/880-8260; Visit:* www.iir-conferences.co.za/effluent

WATER DEMAND MANAGEMENT
NOVEMBER 27-28
The Water Institute of Southern Africa, in conjunction with WRP, is offering a Water Demand Management Master Class at Vulindlela Auditorium, in Midrand on 27 & 28 November and at the The Pavilion Conference Centre, in Cape Town, on 30 November and 1 December. *Enquiries: Taryn at Scatterlings of Africa, Tel: (011) 563-5085; E-mail:* conference@soafrica.com

WATER MANAGEMENT
NOVEMBER 27-30
The Pan African Water Congress will take place at the Sandton Convention Centre. *Enquiries: Tshego Ratshidi, Tel: (011) 516-4023; E-mail:* tshego.ratshidi@terrapinn.co.za*; Visit:* www.terrapinn.com/2006/waterza

URBAN WATER USE
DECEMBER 3-6
The International Conference for the Sustainable Development of ecoCities will be held in Bangalore. *Visit: www.tciconferences.com/ecocity2006/ecocity2006.htm*

RAINWATER HARVESTING
DECEMBER 4-8
The Tenth Southern and Eastern Africa Rainwater Network (SearNet) Conference on Rainwater Harvesting and Management in Africa will be held in Mombasa, Kenya. The theme for the conference is 'Rainwater Management for Disaster Mitigation and Sustainable Development.' *Enquiries: SearNet Secretariat at E-mail:* searnet@cgiar.org*, Visit:* www.searnet.org

SCIENCE COMMUNICATION
DECEMBER 4-7
The annual conference of the South African Agency for Science and Technology Advancement will be held in Port Elizabeth. The conference will focus on the need to develop science communication and establish collaborative networks on the African continent. *Enquiries: Taskeen Henry, Tel: (041) 365-5634; E-mail:* taskeen@inkanyezi.co.za

SOIL SCIENCE
JANUARY 22-25
The combined conference of the South African Society of Crop Production; the Soil Science Society of South Africa and the South African Society for Horticultural Sciences will be held at the Aventura Resort at Badplaas, Mpumalanga. *Enquiries: Garry Paterson at E-mail: garry@arc.agric.za; or Charmaine Sullivan at E-mail: sullivanc@mweb.co.za; or Visit: www.sascp.org.za/congress/CongressHome.html*

WHO guidelines on use of wastewater

The new guidelines from the World Health Organisation on the use of wastewater, excreta and greywater in agriculture and aquaculture was presented to the public for the first time at the Fifth International Water Association Water Conference, held in China earlier this year.

Wastewater is a resource of ever-growing importance. However, its use for crop and fish production carries important health risks.

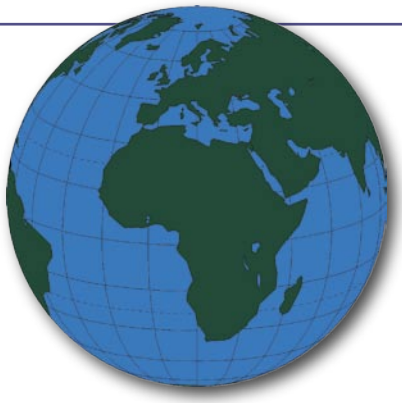
The third edition of the guidelines reportedly marks a departure from the presentation of static standards and norms to best practice guidance in risk assessment and management for the use of this increasingly important water resources. The guidelines describe possible risk management interventions for the various phases from the generation of wastewater, excreta and greywater to the consumption of produce from which they were used. There are four volumes, each with a different focus and target audience.

To access the guidelines, go to www.who.int/water_sanitation_health/wastewater/gsuww/en/index.html

'Drought-proof' village for Brisbane

Work on Brisbane, Australia's first 'drought-proof' village is continuing. Construction of the 21-house development, dubbed S3 Manly West, started in April. It will not be connected to the city's water or wastewater network.

Instead, all homes in the village will have rainwater tanks installed, and use recycled water extensively, reportedly using up to 50% less water than a typical residential community. Residents will also enjoy biological, organic water treatment of all rainwater, and wastewater will be recycled and treated to a standard comparable to drinking water – before being reused in toilets, gardens and car washing. The initiative has been welcomed by authorities as the area is suffering from its worst drought on record.



Filtration technique proven to remove algae toxin

A water filtration technique that normally cleans up agricultural chemicals is also effective at removing a toxin secreted by algae found in lakes and rivers, an Ohio State University, in the US, has found.

Engineers here have determined that the technique greatly outperformed other methods by removing at least 95% of a toxin secreted by Microcystis, a blue-green algae. Apparently some water filtration plants around the country are already using the technique, which couples activated carbon with membrane filters. The engineers combined the active carbon with three different commercially available membrane filters. Each combination apparently produced good results.

Calling all engineers with a conscience

Engineers play a crucial role in improving living standards throughout the world, and they have the potential to ensure sustainable development in the 21st century.

The Mondialogo Engineering Award invites engineering students in developing and developed countries to form international teams to create project proposals that address the UN Millennium Development Goals – proposals to improve the quality of life in the developing world, particularly poverty eradication and the promotion of sustainable development. Each team should actively engage in international cooperation and intercultural dialogue over a six-month period, from December 2006 to May 2007, to propose practical, high-quality engineering projects for the benefit of local communities in developing countries.

Registration is open to project teams whose members are officially registered as students at universities, technical colleges or similar institutions through to May 2007. Teams must register before 30 November. Ten awards of €20 000 will go to teams with the top project proposals, with an Honourable Mention and €5 000 earmarked for 20 more teams.

For more information and to register, go to www.mondialogo.org

Soybean touted as pollution solution

US scientists are testing soybean hulls as a filtering agent that can adsorb harmful levels of lead, chromium, copper and cadmium from contaminated waters.

Researchers from the US Agricultural Research Service have reportedly created a material from these residues known as a dual-functioning ion exchange resin. These resins, which are commonly used for treating industrial and municipal wastewaters and for recycling heavy metals from solutions, are typically effective in capturing only one kind of particle with either a positive or negative charge. However, the soybean hull resin can apparently capture both.

Fish 'grown' rather than caught

Nearly half the fish consumed as food worldwide are raised on fish farms rather than caught in the world, according to a new report from the United Nations Food and Agriculture Organisation (FAO).

While in 1980 just 9% of the fish consumed by human beings came from aquaculture, today 43% does, the report, *The State of World Aquaculture 2006*, shows. That is 45,4 million tons of farmed fish, worth US$63-billion, eaten each year.

Globally, consumer demand for fish continues to climb, especially in affluent, developed nations which in 2004 imported 33 million tons of fish. However, levels of captures of fish in the wild have remained roughly stable since the mid-1980s, hovering around 90 to 93 million tons a year. According to the FAO, there is little chance of any significant increases in catches beyond these levels. The only option for meeting future demand for fish is by farming them, the FAO argues.

To access the report, go to ftp://ftp.fao.org/FI/DOCUMENT/t500_advanced/advanced_t500e.pdf

Atlas notes human destruction of lakes

Increasing concern as to how human activities impact Africa's lakes has led to the launch of *Africa's Lakes: Atlas of Our Changing Environment* by the United Nations Environment Programme (UNEP).

Through a combination of ground photographs, present and historic satellite images, and narrative based on extensive scientific evidence, this publication illustrates how humans have altered their surroundings, and continue to make observable and measurable changes to Africa's lakes and their environment. The atlas underscores the importance of developing, harnessing and sharing technologies that help provide deeper understanding of the dynamics of the changes.

Africa has an estimated 677 lakes (both natural and man-made). These lakes hold about 30 000 km^3 of water. Among the lakes featured in the atlas is Lake Songor, a brackish coastal lagoon in Ghana. Home to several threatened species, the lake appears as a solid blue mass some 74 km^3 in size in December 1990. But, by December 2000, the water body is a pale shadow of its former self largely as a result of intensive salt production and evaporation at the western end.

Speaking at the launch of the atlas in August, UNEP Executive Director, Achim Steiner, said: "Lakes and the natural goods and services they supply to communities are of huge economic significance. I hope that the images in the atlas will sound a warning around the world that, if we are to overcome poverty and meet internationally agreed development targets by 2015, the sustainable management of Africa's lakes must be part of the equation."

In brief

- The Ntimbale Dam, in the North Eastern District of **Botswana**, is nearing completion.
- The government of **China** is planning to spend US$125-billion over the next five years to remediate the declining quality of its urban water supplies.
- The 77-year-old **Nile** Treaty, said to favour Egypt, is set to be replaced as negotiations continue for the establishment of a Nile Basin Commission to replace the controversial 1929 treaty that restricts the use of the river.
- US space agency **NASA** can reportedly track the effect of climate change on forests. Scientists have found that satellite measurements of tree species and growth in forested areas across the US were often equivalent to those taken directly on the ground.
- The 87-km Katima-Mulilo-Linyanti water pipeline has been officially inaugurated in **Namibia**.
- Brazil and Botswana have agreed to cooperate in **agricultural research** over the next five years. According to SciDev.Net, the collaboration will include research to improve livestock and crop production. It will involve work on plant and animal health, food processing, and the sustainable use of soils and other natural resources.
- **SUEZ Environment** has been named preferred bidder for a concession-type contract to manage the water services for the city of Changshu, located in the delta of the Yangtze River. The 30-year full services contract represents a first-year turnover of €1-billion.

MoU to enhance African water

A Memorandum of Understanding (MoU) has been signed between the Stockholm International Water Institute (SIWI) and the CSIR.

The MoU aims to foster knowledge creation that leads to concrete water-driven social, economic and environmental improvements. "This MoU offers exciting potential for concrete action because it combines the strengths of the CSIR in science, technology and research with SIWI's well-respected policy perspectives," commented Dr Pat Manders, Acting Executive Director of CSIR Natural Resources and Environment.

In particular, the two organisations seek to develop cooperative opportunities in water policy, water governance, transboundary water resource management, and water-resource based socio-economic development. The activities are intended to be placed within the general context of Millennium Development Goal attainment as well as more specific objectives outlined by the New Partnership for Africa's Development.

Water purifier wins award

The AG+Colloidal Purifier water purifying device, designed by Boris Iskra, Jean-Marie Julien and Vadim Drozdov was one of the winners at the 2006 SABS Design Institute Prototype Awards.

The device comprises a three-sectioned cylinder divided into an electrodes compartment, a sealed circuitry and a battery compartment. Containing two silver electrodes the electrode compartment screws into a two-litre plastic cold drink bottle. In turn, the battery compartment contains a 12 V battery and a LED with an activating link.

The electrodes are inserted in the water that needs to be purified and the LED flashes to show that the purification is in process. The LED stops flashing once the process is completed.

According to the designers, all bacteria are killed within 45 minutes. Commenting on the device, the adjudicators said: "Using silver electrodes for water purification is known technology, but the designers applied sound and practical design considerations."

Multimillion Rand upgrade for JW works

Johannesburg Water is upgrading its Northern Works Wastewater Treatment Plant.

The upgrade is aimed at catering for increased flows due to ongoing developments in its catchment area.

The new unit is being designed at present and will ultimately add 150 Mℓ capacity to the Northern Works at an estimated cost of about R450-million.

With regards to the reported spillages into the Jukskei River during June, JW said these were mainly due to a problem developed during some essential upgrading work being undertaken. "The substandard effluent of some 80 litres per second of settled sewage was substantially diluted and neutralised by the treated effluent of about 3 000 litres per second with a quality well within the Department of Water and Forestry license requirements," the company said in a statement. Current *E. coli* levels are said to be within allowances.

More flexibility with ultrasonic upgrade

Endress+Hauser has released its Prosonic S ultrasonic level measurement device.

Prosonic S comprises the FMU90 transmitter and the FDU9x sensor, which may be remotely mounted at a distance of up to 300 m. Two housing variants are available: on the one hand, the robust and weatherproof field housing for on-site assembly, on the other hand the top-hat rail housing for space saving assembly in control cabinets. A separate display for installation in control panels is offered as an option.

The new sensors feature improved properties in relation to blocking distance, material, temperature and measuring range. Hermetically-welded sensors are available for liquid applications and safeguard smooth operation in aggressive media.

For more information, contact Sean Frost at Tel: (011) 262-8000 or E-mail: info@za.endress.com