

# water21

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## *Success with sanitation?*

*International waters:  
cause for concern*

*Management needs  
for urban groundwater*

## Research reveals hidden extent of arsenic risk

**Several strands of research have clarified both the extent of arsenic contamination of groundwater – which is far more widespread than thought – its risks, and the mechanism by which it enters the water cycle.**

Research from the University of Cambridge, presented at the annual Royal Geographical Society meeting in London, has warned that arsenic contamination affects 137 million people in over 70 countries.

Researcher Peter Ravenscroft said: 'What is new is [that] the

extent of arsenic pollution is much bigger than people realised.'

The researchers also noted an important correlation between arsenic in water and in food, particularly where crops are grown using irrigation. Bangladesh was confirmed in the research as the worst-affected country.

Further research from the University of California, Berkeley, has found that arsenic poses long-term health risks exceeding every other potential water contaminant.

Researcher Allan Smith, who advises the WHO on arsenic, urged: 'We must test all water sources worldwide as soon as possible.'

A report in the journal *Nature* also revealed that research from Manchester University has made significant inroads into understanding why groundwaters become contaminated.

Although the problem is well-documented, the natural mechanisms that create it are not well understood. The research

shows that particular types of anaerobic bacteria leach arsenic from rock strata that contain it and cause it to enter the groundwaters.

The revelation leads to the possibility of monitoring vulnerable waters for signs of bacterial activity as a way of indicating potential contamination.

As the bacteria are most efficient in a low oxygen, high carbon environment, simply pumping air through the aquifer might be helpful. ●

## Europe looks at scarcity policy options

**The European Union set out a report and a number of policy options on water scarcity ahead of the Informal Environment Council in Lisbon at the beginning of September, which was due to focus on water scarcity and droughts.**

The EU's output began in June with a climate change adaptation Green Paper that warned of the need to set out a mitigation strategy to address water scarcity.

This was followed in July with a communication from the European Commission on the issues to be taken into account to ensure the availability of water for all human, economic and social activities and an initial set of policy options, at the heart of which was the need to reduce EU water usage and manage resources better.

Key within the policy statement is

the observation that the 'user pays principle needs to become the rule regardless of where the water is taken from. Efforts to introduce compulsory metering programmes are thus essential.'

It adds: 'Water savings and water efficiency need to be promoted given that there is a tremendous potential for water savings in the European Union. While it is estimated that approximately 20% of the water available is wasted, recent data indicate that it could go up as high as 40%.'

'Therefore, substantial changes must be made on how water is channelled to users and how it is used. It is easy, for example, to promote the installation of water saving devices on taps, shower heads, and toilets.'

(See Analysis, p12) ● LS

## Groundbreaking Danube survey passes halfway point

**The biggest river expedition of its kind in 2007 was launched in August from Regensburg, Germany, and was past its halfway mark as *Water21* went to press.**

Three ships have been travelling down the 2375km of the Danube river and its main tributaries to test pollution and water quality.

The €1 million-plus Joint Danube Survey 2 has achieved cooperation between all of the riparian countries from Germany to Ukraine, and teams of national scientists are helping with on-board sampling and testing. Serbia and Hungary provided ships.

The survey aims to produce comparable and reliable information on water quality along the entire Danube and many of its main tributaries, to help Danube

countries implement the 1994 Danube River Protection Convention and reporting requirements for the EU Water Framework Directive.

Parameters being tested include pesticides, pharmaceuticals, heavy metals and bacteria and biological testing such as for fish and plankton. This is the first time such a range of factors has been used on the Danube – traditionally only physical and chemical factors have been tested.

The ships are also stopping at many cities en route and raising awareness of the need to clean up the Danube. The results of the survey, whose early stages were plagued by bad weather and duckweed, will be revealed next summer. ●

## Climate change intensifies desertification concerns

**UN secretary-general Ban Ki-moon has warned that the 'twin threats' of desertification and climate change 'pose unrivalled challenges to humanity'.**

He gave the assessment in a speech to the Conference of the Parties to the UN Convention to Combat Desertification, which took place from 3-14 September in Madrid.

Desertification and climate change, he noted, were 'two major manifestations of the same problem', and also obstacles to reaching the MDGs by 2015.

Mr Ban told the conference that global warming will lead to increased poverty, forced migration and vulnerability to conflict in regions affected by extreme weather events. He added:

'Concerted efforts to combat desertification – by reclaiming degraded land, combating soil loss and restoring vegetation – can help curb greenhouse gas emissions, strengthen the resilience of affected countries and build their capacity to adapt to climate change.'

Michel Jarraud, secretary-general of the World Meteorological Organization (WMO), stressed to the conference that one of the most important issues facing the world is the need to ensure food security through sustainable management of water and soil resources.

He warned that since the 1970s more intense, longer droughts had been occurring over larger areas, particularly in the tropics and subtropics. The combination could cause land degradation, leading to

desertification.

He noted that 2007 has already seen a high number of extreme events, including droughts in parts of southern Africa that have caused maize production to crash in Lesotho, Swaziland and Zimbabwe.

The conference gave backing to the WMO international workshop on climate change and land degradation, held in Arusha last year, which recommended a number of actions including use of historical climate data and change scenarios for strategic planning, targeted weather forecasts at very local scales to help decision-making, and improved collection of detailed rainfall intensity data to help gauge surface erosion.

Warren Evans, director for environment at the World Bank,

also spoke to the conference, saying: 'While desertification must be fought at all levels, it is clear that the battle must ultimately be won at the local level.'

He also stressed the importance of donors working together, and urged partner countries to take the chance to act, urging: 'The current global focus on climate change and the availability of additional funds for adaptation provide an opportunity to improve the strategies and action plans for more coordinated effort at the national level on sustainable development and the reduction of desertification and land degradation.'

A summit to determine actions on climate change in the post-Kyoto period after 2012 is set to take place in Bali in December. ● LS