

The scramble for blue gold

The true value of water is life itself. This is more so in Africa than any other continent, as water wars, scarcity and quality affect not just how the population lives, but how it dies. KERRY DIMMER investigates the largest pending humanitarian catastrophe of our time

Of the current 1.3 billion km³ of water on our planet, only 3% is freshwater. Unfortunately most of that is in the form of ice sheets, leaving us with only 0.036% in lakes, rivers and reservoirs with another 0.001% as clouds or atmospheric vapour.

Consider that we are adding 85 million people to our planet annually and that our per capita use of water is doubling every 20 years (more than twice the rate of human population growth) and it becomes clear that water is becoming the most important survival issue of our time. In fact, water scarcity is a crisis of such immense proportion that some analysts predict wars will be fought over what is now being touted as 'blue gold'.

Maude Barlow, senior adviser on water to the president of the UN, comments on the water wars. 'It is extremely important to

negotiate water treaties and to manage water problems and not allow them to become sources of conflict. Once they do, military and security interests take over from those concerned with sustainable development, environmental stewardship and the right to water for all.'

There is already conflict. Tensions have fluctuated for decades between some of the countries that share the Nile River – Kenya, Burundi, Rwanda, Tanzania, Eritrea, Ethiopia, Sudan, Egypt, DRC and Uganda.

The Nile Co-operative Framework Agreement seeks to establish a permanent Nile River Basin Commission between the Nile Basin countries to manage, protect and develop the resources of the river. This agreement will replace the existing 1929 Nile Treaty. However, Egypt and Sudan have deadlocked negotia-

tions, each fearing that their access to – and power over – the Nile waters will become limited. Both countries consist largely of desert and depend almost entirely on the river for agricultural production.

Over the past two years, 140 million African adults have gone without enough clean water in their homes for basic survival. A Gallup poll, surveying 30 African countries, found that Nigeria is hardest hit, followed by Tanzania, Chad, DRC and Togo.

The African Development Bank claims that by 2025 more than 25 African countries will have less than 1 000m³ of water per person, per year. Startling figures have also emerged from the UN that estimate a weekly death toll of 42 000 people from diseases directly related to poor water quality and inadequate or nonexistent sanitation.





Women near the village of El Borg in Egypt walk for several kilometres to collect water

As freshwater sources decline, people tend to migrate to areas where water appears to be abundant, such as the Nile, the source of which (Lake Victoria) is already diminishing.

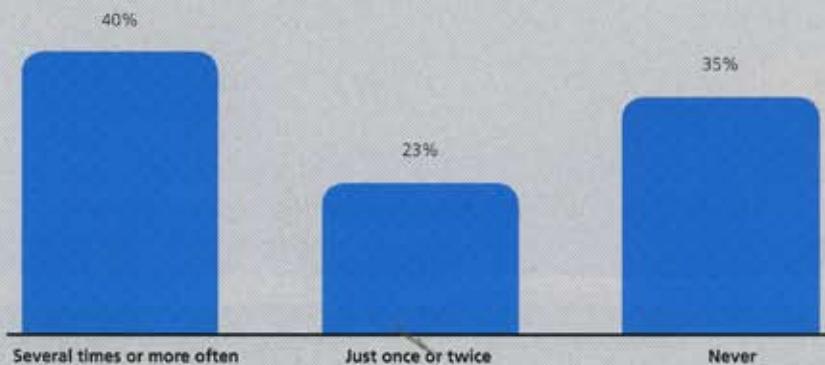
Lake Chad is another example. Once the sixth largest lake in the world, it is now one tenth its former size due to persistent drought, river capture and damming over the past 50 years.

Barlow points out that 677 of Africa's major lakes are in crisis and not just from natural factors such as global warming, flooding and drought. 'There is an unprecedented water crisis in Africa due to contamination of source waters, over-extraction of ecosystems and acute inequality in terms of access to water.'

As a general rule, lesser-developed countries experience a poor quality of water while more developed ones have scarcity issues, largely due

OVER THE PAST YEAR, HOWEVER OFTEN, IF EVER, HAVE YOU OR YOUR FAMILY GONE WITHOUT ENOUGH CLEAN WATER FOR HOME USE?

Median score for 30 countries in sub-Saharan Africa, 2006–2008



Source: Gallup.com

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to years of mismanaging industry, mining water usage and miscalculating the use of existing water supplies. South Africa and its neighbours Namibia and Botswana, are experiencing chronic water shortages.

James Blignaut is a professor of economics at the University of Pretoria in South Africa. His research into water biodiversity and energy in sub-Saharan Africa has led him to publish a number of reports that detail the water crisis and offer viable solutions.

'Although South Africa has nationalised water, ensuring water for all, it is the responsibility of local municipalities to include water management in their urban planning activities.

Unfortunately, economics and politics tend to be the focus of attention and not enough consideration is given to the maintenance of wetlands for example.'

Wetlands are integral to water quality and sustainability. They are nature's filtration system, acting like a sponge to 'wash' contaminated water such as that expelled from mining activities. 'Mining activities discharge water containing heavy metals and toxins, like arsenic and mercury, that creep into the rivers and ground catchments,' says Blignaut.

The Klipriver area, around Johannesburg's Soweto, is an integral system of wetlands which filter the Klipriver. Overpopulation in

the area has resulted in encroachment on the river banks causing degradation of the wetlands and further contamination by substances like non-biodegradable growth hormones.

Director of the Freshwater Programme at the South African National Biodiversity Institute, John Dini, says of freshwater ecosystems: 'They are inseparable from the water resources upon which we are so reliant. Let us not fall into the trap of believing that the answer to the looming water crisis lies solely in complex and expensive engineering solutions. Nature has provided robust and free technology, which we must first and foremost recognise, respect and protect.

'We need to get two messages across to other sectors that are reliant on water for their productivity. One, your business depends on freshwater ecosystems; and two, we need to change the way we use, allocate and manage our scarce water resources. Continuing with business as usual is not an option.'

The epicentre of the water crises is sub-Saharan Africa where poverty, endemic disease and environmental degradation have a direct bearing on the GDP growth of a nation. It has been shown that if, for example, Kenya can improve its resilience to the effects of flooding and droughts, its GDP could grow at an annual rate of 5–6% – exactly what is needed to effectively reduce poverty and famine issues in the country.

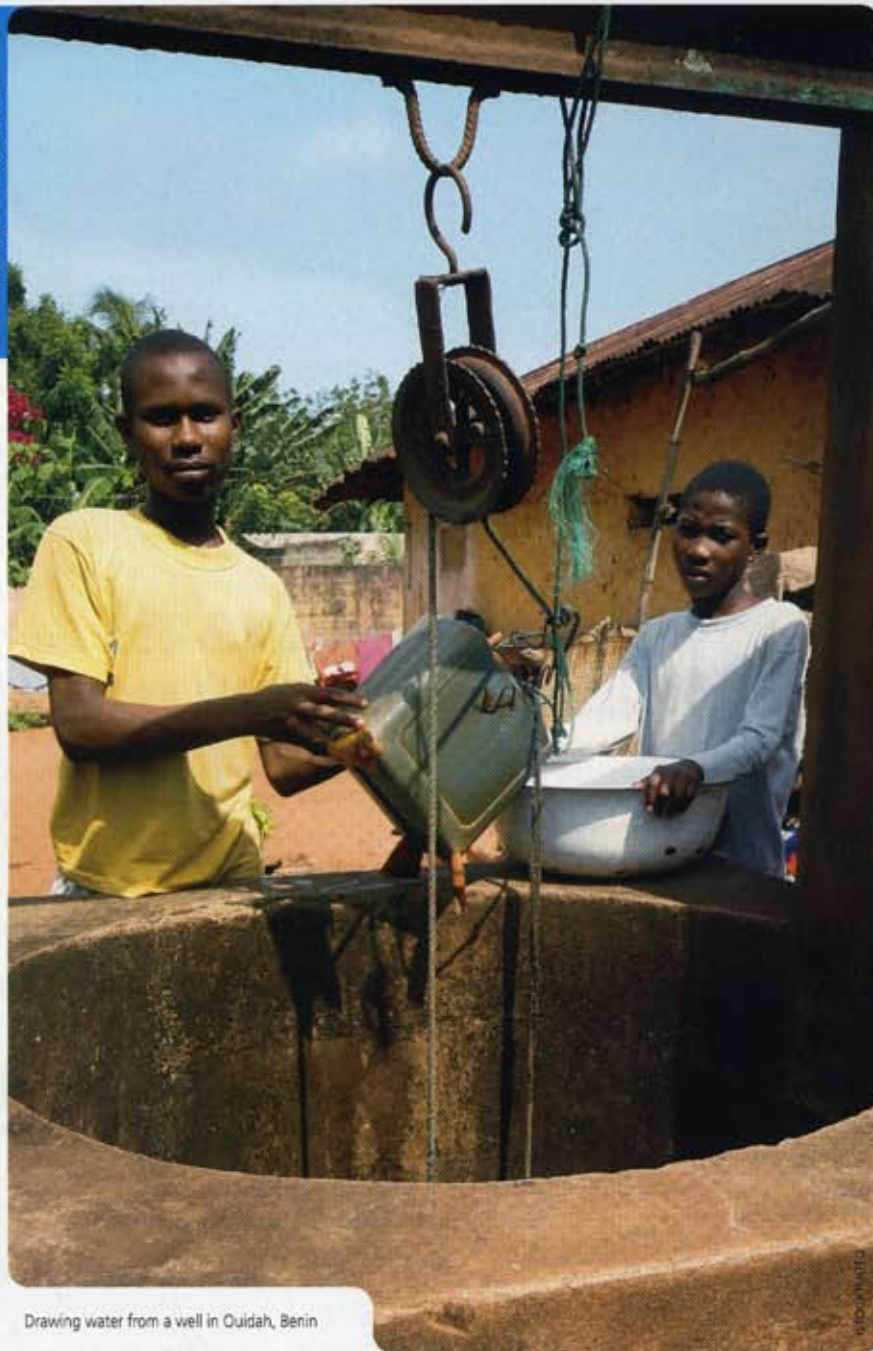
Last December, officials met in Libya at the Water for Energy and Agriculture conference

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Percentage of respondents who say several times or more often, 2006–2008

Nigeria	64%	Burundi	43%	Uganda	35%
Tanzania	55%	Cameroon	42%	Ghana	31%
Chad	54%	Liberia	42%	Mozambique	31%
DRC	53%	Central African Republic	41%	Mauritania	30%
Togo	52%	Rwanda	41%	Niger	29%
Sierra Leone	48%	Angola	40%	Madagascar	27%
Benin	47%	Ethiopia	38%	Malawi	21%
Kenya	46%	Zimbabwe	37%	Sudan	21%
Mali	46%	Burkina Faso	36%	Senegal	18%
Zambia	45%	Guinea	36%	Botswana	09%

Source: Gallup.com



Drawing water from a well in Ouidah, Benin

to discuss how improved water sharing in Africa could enhance agricultural production. The potential exists for Africa to produce the highest crop yields in the world but water scarcity, mismanagement and quality issues mean that most irrigation systems are

ineffective, cementing Africa's dependence on foreign imports and increasing national debt.

At the meeting, Jacques Diouf, director general of the Food and Agricultural Organisation of the UN, insisted that concrete and effective measures to address the issue of

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water in Africa have to be a shared responsibility. A 2008 FAO report, *Water and the Rural Poor: Interventions for Improving Livelihoods in sub-Saharan Africa*, argues that the potential exists for 'well-targeted, local inventions in water that will contribute to rapid improvement in the livelihoods of the rural poor in sub-Saharan Africa, helping to eradicate extreme poverty and hunger.'

One such solution is drip irrigation. In the 1960s Israel perfected this revolutionary system for agricultural application and used it to turn arid lands into viable crop-yielding plantations. With drip irrigation, water is directed to a crop through a tubing system laid along crop rows delivering a continuous, drop-by-drop flow of water directly to the roots of a plant.

The water efficiency of this drop-by-drop system is 50% higher than by any other means of irrigation and has proven to be one of the most cost-efficient, low-tech, low-maintenance solutions available, making it ideally suited to African conditions. Israel has since subsidised the set-up of five drip irrigation projects in Senegal with the result that farmers now enjoy year-long yields from limited water supplies.

The rest of Africa, however, still plays victim to never-ending flood-to-drought cycles, equatorial evaporation and increasing climate change. Africa does not have the financial resources to develop the mass of hydropower and desalination plants that could make the continent an economic powerhouse.

Barlow offers the following solution: 'Every country in Africa must declare the waters of its territory to be a public trust run by government as a not-for-profit service. Access to safe, clean water must be declared a human right in every nation, state and constitution. Transnational water corporations should be told to leave Africa.'

'Watersheds must be protected from pollution and over-extraction, and traditional rainwater harvesting techniques must be applied to bring back watershed health. Priority must be placed on the use of water: first for life and local food production, and only then for commercial purposes and only under a strictly enforced permitting scheme ... All priority must go to protecting source water and assuring its use for life.'

John F Kennedy once said: 'Anyone who can solve the problems of water will be worthy of two Nobel prizes – one for peace and one for science'. Water must surely become the catalyst for peace and technology, not war and division. **AD**