

Everybody's business - and no one's job

Deadly toxins reach alarming levels in SA waters, but the government won't acknowledge the urgency

By INGI SALGADO

The agricultural sector could take the first and hardest knock, with possible restrictions on exports to key markets as a result of concerns about produce that is irrigated with contaminated water.

GlobalGap, a private sector body that sets voluntary standards for the certification of food products, has already voiced concern about contamination in Western Cape and the Olifants River system that straddles Mpumalanga and Limpopo.

Food retailer Pick n Pay, which requires agricultural producers to assess the microbiological quality of their water each month, has identified the same problem regions.

By comparison, the quality of irrigation water in Gauteng and North West's is "normally quite clean" because farms there tend to use borehole water, says Tessa Chamberlain, Pick n Pay's general manager for sustainable development.

Nic Opperman, the natural resources director of farmers' representative body AgriSA, says water quality problems will become "a disaster" unless something is done.

"If we think [electricity] is a crisis, then this is deadly poison," he says.

The entire economy is at risk - if not because of increasingly poor water quality, then certainly because South Africa has almost no spare water.

Environmental group WWF South Africa says 98.4 percent of the country's available water supplies are allocated - a worrying figure, given limited options for new dams, increasing demand and unfavourable climate change predictions. Rainfall patterns are projected to decline in the western half of the country over the long term.

Water availability and quality are closely linked. Because South Africa has lost the capacity to dilute the contaminants in river systems, water quality is compromised further.

The National Business Initiative (NBI), a voluntary association that plays a key role in corporate campaigns for energy efficiency and climate change, plans to put water on the agenda next year.

"It's a business imperative," says Val Green, the head of the NBI's sustainable futures unit. "The feedback from business thus far is that water quality and security are big issues, along with skills for water management."

Science vs the state

Green cites a November address by Anthony Turton, the scientist who was forced to resign from the Council for Scientific and Industrial Research after his outspoken calls for science to respond to South Africa's water quality challenges.

"He scared us with the picture he created," says Green.

Turton says he is not in the business of scaring people, nor does he like the limelight he has found himself in since his resignation. He prefers to think of himself as "the backroom boy with the task of joining the dots" or, more ominously, "the watcher on the Titanic".

His paper on water quality challenges says: "There are two major issues that are about to burst into the boardrooms of large corporations and into the corridors of government power":

- Acid drainage from mining: acidic water containing heavy metals enters groundwater and river systems; and
- Eutrophication as a result of human activities: water becomes overenriched with nutrients, causing excessive plant growth that depletes oxygen, killing fish and other animals.

Turton's paper says eutrophication is at almost unprecedented levels in South Africa's; left alone, it will slowly poison our waters.

As for acid mine drainage, the ingenuity required to solve the problem exceeds the "combined capacity of all of our research institutions", he says. Co-operation and partnerships are thus essential, he advises.

The paper calls for studies to determine the impact on human health of radionuclide and heavy metal contamination in rivers flowing out of most gold mining areas, as well as excessive microcystin loads in water storage impoundments.

Scientists say that sewage spill into rivers, combined with industrial and mining pollution, spurs algal growth, which in turn produces biotoxins known as microcystins - thousands of times more poisonous than a cobra bite.

The average microcystin load of South Africa's five worst affected dams is between 10 000 and 15 000 micrograms a litre. Finland's worst recorded case is 10 micrograms a litre

Turton believes business must play a crucial role: the government is constrained by skills shortages, and in any case oversight for water falls to municipalities that are fragmented and under-resourced .

Massive investment is required in new technologies to remove endocrine disruptors from drinking water, he says.

Existing technologies do not take into account high levels of oestrogen in water from the use of birth control pills, nor high levels of antiretrovirals as a result of HIV treatment, he says.

He says 63 percent of Gauteng's 42 sewage works are malfunctioning and would require an investment of R100 million each for refurbishment.

Earlier this month, while announcing the R7.3 billion second phase of the Lesotho Highlands Water Project to augment the Vaal, water affairs and forestry minister Lindiwe Hendricks urged South Africans not to worry about the quality of drinking water: "Our tap water is still rated among the best in the world," she said. "South Africa is one of only a few countries where one can drink water directly from a tap."

Not everyone agrees. James Harris, a Democratic Alliance councillor in the Govan Mbeki municipality in southwest Mpumalanga, says a "paradigm shift" is needed to acknowledge that a "major crisis" is at hand.

Harris believes South Africa's legal limits for salts, phosphates and heavy metals in drinking water are too high. He points out that some municipalities still filter river water through sand systems, which do not remove heavy metals; and that many rural communities draw water directly from polluted streams.

Hendricks says universal access to water and sanitation services will be completed by 2014. She says 5 percent of municipalities do not yet comply with drinking water health standards or report on them.

Her department aims to issue "blue drop" certificates to those that comply and "green drop" certificates to those that meet standards on discharge of waste water.

Good news from the department is that it is dedicating more resources to get tough on polluters, as well as those who are illegally drawing water, particularly along the upper Vaal River.

Onus on producers

In the meantime, farmers such as Jan Boshoff are dealing with the fallout from pollution. Some of Boshoff's

cattle have died, allegedly as a result of spillage from the sewage plant above his irrigation dam in Leandra, Mpumalanga.

Repeated requests to attend to the problem have brought "no joy from anybody", Boshoff says. Yet he is luckier than farmers who rely on nearby Loskop Dam, South Africa's second-biggest irrigation system, which is dealing with the poisonous concoction of sewage spill and industrial contamination that produces microcystins.

The Water Research Commission last year initiated a quantitative investigation into the link between irrigation water quality and food safety. The study is due to be completed in 2012, when it will give guidance on treatment options.

The commission says food such as fruits and vegetables that are eaten lightly cooked or raw, without peeling or thorough washing, can transmit pathogens from polluted irrigation water.

It notes that contaminated irrigation water may threaten South Africa's continued access to export markets.

Produce grown directly in the soil - root vegetables such as carrots and potatoes, leafy greens and onions - are most at risk of being contaminated by poor quality water, says Pick n Pay's Chamberlain.

The retailer's food safety programme uses the GlobalGap standard, but Chamberlain points out that this is not the case in South African agriculture in general.

"Very little is done to enforce continuous water testing and due diligence in the agricultural sector," she says.

The onus to ensure safe water falls on the private food producing sector and retailers rather, than the state.

AgriSA's Opperman recognises that the agricultural sector is partly to blame for water pollution because of the use of fertilisers and pesticides, but maintains that this has a limited effect compared with the pollution from mining and municipalities.

For decades, these pollution practices have been externalised: in other words, society, rather than the polluter, pays for the contamination.

It appears that the costs have finally caught up with South Africans.

Published on the web by Business Report on January 26, 2009.

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