

Intense water research continues

LYSE COMINS

THE potential impact of climate change on Umgeni Water's ability to provide enough potable water to the province in the future is the subject of intense research after recent studies revealed that stream flows could drop by as much as 20 percent by 2030.

Umgeni Water said it was also researching alternative water sources such as desalination and the reuse of wastewater, and working with all municipalities in KwaZulu-Natal to develop action plans to save water and reduce water stress.

This was according to its Water Conservation Policy of 1999, the statutory body said.

It had made inroads against backlogs in provision of water and sanitation to schools and communities, including areas in KwaMaphumulo, KwaDukuza, Ndwedwe and ILembe districts, previously been dependent on rivers and streams.

Umgeni Water published the findings last week in its annual report, which recorded a 16 percent increase in turnover to R1.493 billion and a 46 percent surplus of R527m, which was 33.9 percent up on the previous year's financial statement.

Capital expenditure was

State-owned supplier responds to climate change

R237m, of which R219m was spent on five major projects under construction, while maintenance expenditure was R100.8m, exceeding the previous year's R77.2m.

"We continued to respond well to our customer water demands, and for the year under review provided a total of 416 million kilolitres of bulk potable water to customers, which was slightly above our business plan forecast of 408 million kilolitres per annum," chief executive Mzimkulu Msiwa said in the report.

"With respect to quality, we continue to achieve excellent potable water and wastewater compliance. For the review year, most of our works achieved 100 percent compliance for both chemical and microbiological requirements."

The report highlighted a 12 percent increase in the use of energy because of the rising demand for water, as well as an increase in the amount of

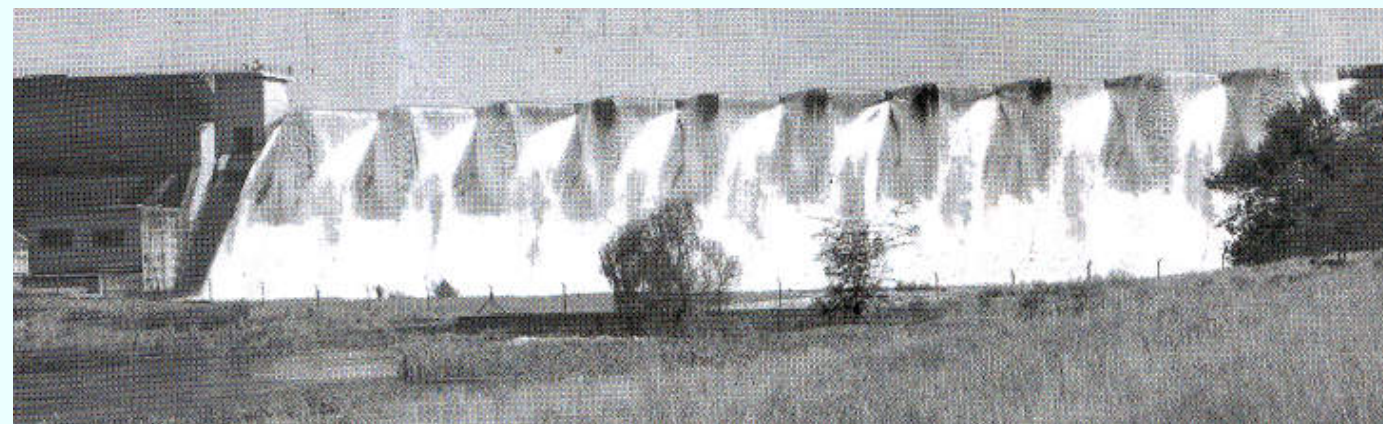
chemicals used because of the poor raw water (before treatment). Dams with poor raw water quality included Inanda, Mzinto, EJ Smith, Mtwalume, Ixopo and Nungwane, while Albert Falls, Nagle and Midmar's water was good and Hazelmere's was satisfactory.

"Our water demand projections are regularly updated based on trends in historical water sales volumes and customer water demand trends," Msiwa said.

Public

He said the public entity continued to share its financial success with customers through bulk water tariff increases (6.5 percent from July 1, 2009 and 3 percent in 2008/9) that have been low compared to inflation.

He said the public entity was working with the Department of Water Affairs to plan for necessary resources, including the Spring Grove Dam near



SUPPLY: Water surges over the wall at Midmar Dam, Howick. According to the Umgeni Water report, Midmar's water quality is good.

Mooi River and the Mkomazi Dam, both still in the planning stages.

"The organisation is particularly mindful of the threat that a changing climate could have on water resources in the future, and has been researching the risk this posed for the past three years. In the review year we continued to build on our research initiatives," said Msiwa.

Recent research has produced startling results that pointed to a potential decline in stream flows of the scarce resource, but Umgeni Water said further research was needed before definitive recommendations could be implemented.

This was because the findings were in stark contrast to what scientists had projected earlier.

Preliminary results from research done last year had indicated a possible increase in stream flow in 2065 and 2100 with a reduction in year-on-year variability.

To improve confidence in these results, Umgeni Water obtained additional climate models, bringing the total to five, which it had used to model potential future water supplies. The models were from the Max Planck Institute for Meteorology in Hamburg and the National Centre for Atmospheric Research in Boulder, Colorado.

A major improvement in the

new models was their inclusion of predictions of the immediate future, which were particularly useful for assessing water planning horizons.

Future

"Contrary to results from the first analysis, results presented show that streamflows under future climate scenarios could decrease by 20 percent of current streamflows. Notably, these decreases could occur as early as 2030," according to the report. "Should these predictions materialise, the organisation would find it increasingly difficult to meet assurance of supply commitments in this already stressed catchment with-

out the implementation of suitable adaptation strategies."

However, Umgeni Water said it was premature to make definitive recommendations.

"Rather, an envelope of the five available climate models will be assessed to ascertain the likely probability of any increases or decreases in future streamflow. These analyses will also provide the much needed data for assessing the possible impact of a changing climate on water yield and assurance of supply at the main dams," the report stated.

Umgeni Water is collaborating with the University of KwaZulu-Natal's School of Bioresources Engineering and

Environmental Hydrology to obtain results of impact assessments using five climate models from the University of Cape Town.

However, Umgeni Water was investigating alternative water sources and had established a forum among the municipalities in the province to share information and discuss measures to save water. Action plans were being developed for discussion with water service authorities and it had met the Department of Water Affairs, which was committed to "diversifying the water mix".

"For KZN specifically, water reuse, reclamation and desalination have been identified in the water reconciliation strategy study for the KZN coastal metropolitan areas, as possible solutions to the region's future water requirements," the report said.

Another alternative water supply assessment under way was a feasibility study on the treatment to potable water of wastewater from the Darvill Works, which discharges on average 60 million litres of effluent a day into the Msunduzi River.

"It is envisaged that further investigations of these options will require rigorous stakeholder and public engagement to ensure the social acceptability of the alternate sources."

