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SA should consider DSM for water as supply deficit looms

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South Africa was ten years too late to implement purely supply side solutions for the water scarcity problem it faced, and must consider demand-side management (DSM) at the local level for water.

Addressing delegates at the Sustainable Water resource conference in Pretoria, Canadian City of Kelowna Utilities operations manager **Don Degen** stressed that research has shown that South Africa will have a 6% water supply deficit by 2013, and an 11% deficit by 2019.

Johannesburg Water chairperson **Martie van Rensburg** confirmed this, and stated that it related to the Vaal River system. She added that Johannesburg Water statistics showed that between 35% and 40% of the water sold by the utility, is wasted.

Degen highlighted that South Africa also experienced six of the major issues regarding water that affected North America. These were: a mismatch between supply and demand; a failure to achieve DSM targets; decaying infrastructure; deteriorating water quality; loss of essential skills; and the undervaluation of water supply.

In 1996, the City of Kelowna had the world's highest water demand, at 1 000 litres per capita a day. Realising that this was unsustainable, the city undertook an operational assessment and implemented a number of programmes to address this high consumption.

By 2009, the City of Kelowna had reduced consumption to 444 litres per capita a day, and was delivering 2% more water, in spite of the significant population growth in the city.

Sharing knowledge gained by the city, Degen explained that the success of the water sustainability action plan that it developed, was that it was reinforced by seven pillars.

The first of these was DSM, and Degen said that pivotal to successful DSM, was understanding exactly where, and in which sector the water was used in the city, and setting realistic priorities and goals.

The second pillar was public education, which Degen emphasised was brought to the individual level, with utility authorities often visiting every household and discussing their water consumption, measurement and reduction, with them.

Third, was linking water conservation to development and construction approvals. Degen explained that bylaws were instituted to ensure that efficient landscaping and irrigation happened at the design or construction stage. This process was described as difficult and required stakeholder input and legal review.

The fourth vital pillar that was strongly emphasised, was the need to ensure full cost pricing, which was reviewed every year. The true cost of service pricing was important, and yet many municipalities or utilities were said to not even be aware of the real cost of delivering water to consumers.

He also noted that things were very different in South Africa where a large proportion of people could not afford to pay for basic water allowances, and that cost would need to be subsidised. There was also the challenge that many indigent people did not even have access to clean drinking water.

Fifth, was the reduction of water system leakage, and Degen said that the City of Kelowna had developed a tool to measure and identify water leakages, as it attempted to reconcile the total amount of water pumped, with the total amount of water measured through meters.

The sixth pillar, was the creation and implementation of bylaws promulgating the fitment of low-flow water fixtures in all new buildings.

And finally, water reuse, and the treatment of effluent, and capture of storm water was being explored for re-use in developments for nondrinking water.

Degen also reiterated that the programme has been successful because it has been backed by political will, and

utilities have realised the importance of having long-term plans which exceed the average four-year or five-year plans, which run as long as political appointments.

He added that utilities must get connected to customers, and properly understand the demand from consumers.

"Who is using what, and at what cost? Once you know that, you can start to make important decisions. The only way that demand is going to be wrestled to the ground, is to change social values and behaviours," Degen emphasised.

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