

New Water Framework Counts Every D R O P

Large-scale bulk water infrastructure projects are said to become scarcer in future as the government seeks alternative ways to ensure South Africa's water security. Lani van Vuuren reports.

At the recent launch of the Water for Growth & Development framework in Midrand the message was clear: South Africa needs to implement drastic measures in order to secure its water future. The framework, the result of two years of consultation of the Department of Water Affairs & Forestry (DWAF) with key players in the water sector, will guide actions and decision that will ensure water security in terms of quantity and quality to support South Africa's requirements for economic growth and social development.

"The increasing pressure to deal with increasing economic and social demands, in a declining world economy presents particular challenges to the water sector," noted Minister of Water Affairs & Forestry Lindiwe Hendricks. "It certainly presents pressure on our natural resource base and our environment. We need to ensure that the little water we have is protected from pollution and conserved to achieve efficient use. This requires careful management of this precious resource so that we are able to extend basic water services to every citizen while meeting the needs of economic growth without threatening the environmental integrity of our water resources."

FUTURE WATER MIX

Addressing hundreds of delegates at the launch of the framework, the minister said that her department would have to make "some very difficult and bold" decisions in the way it harnessed and allocated available resources which would have to be very different to the way in which it was done in the past. "The process of developing the framework has forced both government and the water sector partners to confront some hard truths about challenges in the sector," said Hendricks. One significant departure from the norm would be the sourcing of water to meet increased future demand.

Historically, investment by DWAF in securing water supplies mainly took the form of dams, reservoirs and accompanying infrastructure. However, most of

the best dam sites have been developed, and there is currently very little potential in this regard apart from some parts in KwaZulu-Natal and the Eastern Cape. The large-scale bulk infrastructure projects are also extremely expensive to build.

In future, apart from traditional augmentation schemes, the department will increasingly investigate alternative water supply options to meet increasing demand. "In the long term, while surface water will remain the predominant source of water, DWAF expects surface water to contribute proportionately less with proportionately significant increases in other options, including recycling of water, desalination and increased use of groundwater," said DWAF Director-General Pam Yako. "Large-scale bulk water transfer projects will only be implemented in cases where it is really necessary."

Dedicated research and the development of improved technology are making alternative water resources cheaper and easier to implement. For example, advances in desalination technology have reduced costs to between R5/m³ and R7/m³, making it a more attractive option, especially in coastal areas. DWAF is seriously considering the desalination of seawater for coastal towns in future. Large cities such as Cape Town and Durban are already investigating the feasibility of this technology to augment their water supplies.

The department is also looking at increasing supply from groundwater sources. While groundwater is widely accessible and often close to point of use, planners and consumers frequently either do not recognise it as a resource or shun it as inferior to surface water. However, DWAF believes that groundwater offers a relatively conflict-free way of providing water to especially rural communities across the country. The department is set to invest in quantifying as accurately as possible resource volumes at a scale useful to planners and users at local level in efforts to exploit this means of water supply more effectively.

Water recycling is a phenomenon that is expected to increase significantly especially in urban areas in years to come. The use of treated effluent has been identified as a major potential source of water, especially in coastal cities where most effluent is discharged into the sea at present. The treatment of water from mining sources is another attractive option as it could lower the environmental costs of this water, which tends to present a high pollution risk to both the country's rivers and the water table in areas with extensive mining activity.

CURBING DEMAND

Henceforth water conservation and water demand management would be non-negotiable in all water-dependent sectors, reported Yako. The department is currently engaging with each sector and will be setting sector-specific targets. "DWAF is very mindful of water use behaviour that impacts negatively on water resource quantity and quality. It is exploring a potential mix of mechanisms to change this behaviour that include regulatory instruments, market-based instruments, self regulation and awareness and education," said the Director-General.

Unaccounted-for water will also receive more attention.

A major source of water loss is ageing infrastructure exacerbated by poor operations and maintenance at municipal level. Analysis shows that this state of affairs is a multi-faceted problem, which includes a lack of managerial and technical skills as well as a lack of funding. DWAF expects to strengthen its



Lindiwe Hendricks

Minister of Water Affairs & Forestry Lindiwe Hendricks said her department would have to make some very difficult and bold decisions in the way available resources were harnessed and allocated to ensure water security for South Africa.

MAIN RECOMMENDATIONS FROM THE WATER FOR GROWTH & DEVELOPMENT FRAMEWORK

Strengthen institutional capacity: While potential water imbalances and interventions to be taken to avert water shortages have been identified, DWAF at present lacks the capacity to oversee the implementation of these strategies and other aspects of its mandate.

Mainstream water: Water must be placed at the heart of all planning decisions taking place in the country to ensure that any decisions that rely on the steady supply of water, both in quantitative and qualitative terms, adequately factor in water availability.

Diversify the water mix: In addition to conventional sources, such as surface water (which accounts for 77% of current water availability), other potential sources, such as desalination and re-use, ought to be considered given the high risk of water shortages.

Promote water conservation and water demand management: The establishment of the water demand funding facilitation unit must be prioritised to provide support to municipalities in their efforts to introduce water conservation/water demand management.

Promote and maintain water quality: DWAF needs to strengthen its compliance enforcement and monitoring as a way of clamping down on water use behaviours that have a detrimental impact on our water resources

Address service backlogs: Service backlogs must be prioritised and addressed through a combination of short-term interventions (such as rainwater harvesting) and the further enhancement of ground-water sources.

Change water use behaviour for the future: DWAF must explore a potential mix of mechanisms to change current negative behaviour, including regulatory instruments, market-based instruments, self-regulation and awareness and education.

Nurture attitudinal and behavioural changes towards the value of water: DWAF has invested significantly in water awareness campaigns over the years and must sustain these campaigns, especially targeting younger children of primary school age.

Source: Water for Growth & Development Framework

Long-term national view of the potential combination of main water sources

Water source	2008	Mid term (2025)	Long term (2040)
Surface water	77%	72%	65%
Groundwater	8%	9%	10%
Water recycling	15%	17%	22%
Desalination	<1%	2%	3%

Source: *Water for Growth & Development Framework*



Lani van Vuuren

Water conservation and water demand management were non-negotiable for all sectors, according to Department of Water Affairs & Forestry Director-General Pam Yako.

regulatory efforts to support local authorities in a bid to reverse this situation. "It becomes an even more crucial intervention when the pollution of water resources is due to faulty (municipal) wastewater treatment works," noted Yako.


CENTRE OF ATTENTION

The Water for Growth & Development framework points to the relationship between water availability and the many forms of economic activity that depend on available water supply of specific levels of quality. DWAF's position is that the country's growth target cannot be achieved at the expense of the ecological sustainability of water resources or meeting people's needs.

"My department will continue to engage extensively and intensively with other sector departments and water sector users on the recommendations outlined in the framework," said Hendricks.

Rather than being an add-on or after-thought, DWAF sees the need for water to be mainstreamed and placed at the nucleus of all planning decisions both in the public and private sector.

The framework seeks to strike an appropriate balance between supply- and demand-driven approaches, taking into account the specific constraints pertaining to this resource. It seeks to ensure sustained investment in the water sector to avert any potential water crisis and to ensure that water management supports social and economic growth targets without compromising ecological sustainability of the resource.

The time for action is now. Shortages will become more prevalent if proper attention is not given to providing more water and managing demand. At the current rate of use the country is more likely to experience water shortages than surpluses by 2025. 



Dniriev van Rensburg

The Department of Water Affairs & Forestry aims to strengthen its regulatory function to assist local authorities in curbing their water losses.