



# **Water Management in South Africa: Are we headed towards a crisis?**

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Expedition H<sub>2</sub>O

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Water will be the single biggest cause for war in Africa within the next 25 years!

This is what the United Nations predicted in 1999.





# Facts & Resources

- 2010 Conflict – Egypt and Sudan take on several Nile-upstream countries about water use.
- Water – **everyone** needs it!
- 97% of the earth's surface is covered by water, only 2.5% of this is fresh water, two thirds of which is locked up in polar caps and glaciers. Of 0.83% of all fresh water on earth, which, only 0.01% is readily accessible.
- The United Nations projects at the current rate of water usage, by 2020 water demand will exceed water supply capabilities by 17%, and by 2025 by 56%.
- Already more than 400 million people live in areas that have severe water shortages.
- The World Health Organization estimates water related diseases claim approximately 5 million lives each year.





- In sub-Saharan Africa, women and children spend on average at least 16 hours a week collecting water



**Boys collecting water in Maputoland**





- Resources – Rivers, dams, reservoirs, recycling plants and desalination plants





# Challenges facing South Africa

Mostly caused by human interference, ignorance and a lack of intervention when it comes to educating the general masses

## Catchment areas

- A catchment area / basin, is the specific geographical area that is drained by a river and its tributaries.
- Destroyed by deforestation, mining & urbanisation.

## Climate change

- Climate change increasingly more prevalent in the world and South Africa
- Results in more erratic weather conditions
- Increase in the frequency and length of drought
- Shorter more intense rainy seasons
- Extensive combined surface area – resulting in high evaporation rate
- Global warming melting glaciers – rising sea level threatening ingress of salt water into fresh water aquifers.





## Drinking water

- South Africa's water service infrastructure, has steadily been deteriorating over the last decade.
- Due to political interference, lack of skills, lack of long-term maintenance and renewal and lack of budget.
- Blue Drop certification – top rated municipalities are the wealthier ones.



**Burst pipe in Bloemfontein**



**Burst pipe in Kempton Park**





## Waste water

- Green Drop Certification – Waste water treatment works
- From 2008 – 2011 increase in Cumulative Risk Rate
- Surplus capacity not available – due to inadequate maintenance and operational deficiencies.



**Overflowing sewer in Kempton Park**





# Pollution

There are different forms of pollution:

- Soil erosion
- Waste water and effluent
- Phosphates and nutrients
- Solid waste



**Pollution in Hartebeespoort Dam**





# Acid mine drainage

- What is Acid Mine Drainage (AMD) ?
- Occurs in ALL mining areas
- Treatment - Heavy metals and pH
- Recent problem – Carolina
- Report to parliament
- Funding & responsibility



**Acid Mine water**





# Revenue recovery

Responsibility of the municipality to provide water and sanitation

Various problems experienced with revenue recovery:

- Old and unmaintained infrastructure
- Old and problematic water meters
- Sudden pressure fluctuations
- Un-metered properties
- Poor and inaccurate meter readings
- Non-payment
- Water-theft





# Public awareness

- Many people ignorant to the need for water conservation
- Industry publications – aimed at engineering sector not public
- Municipal news letters
- Rose Foundation campaign
- Lack of continuous publicity campaigns

**DO YOU KNOW THAT  
ONE LITRE OF  
USED OIL CAN  
CONTAMINATE  
ONE MILLION  
LITRES OF WATER**





*What matters most...™*



# Water saving practices – *You* can do it

- EVERYONE is responsible
- Water conservation should start at home
- Easy ways to save water
- Rain water harvesting
- Grey water
- Incentives to save water?





# Obligations – Government, private sector and population

- Delivery and effective use of drinking water
- Treatment of waste water and effluent
- AMD – Who's going to sort out the problem?
- Desalination plants – long-term impact?
- Population and constitutional rights





# Conclusion

Are water resources in SA sustainable?

What are the consequences if problems are not addressed?

Are we going to change?





# Thank You!

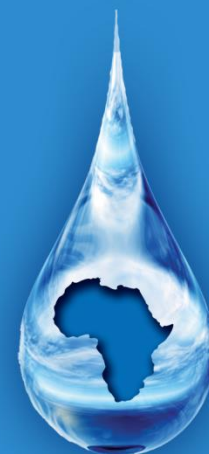
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