



WATER & SANITATION IN SOUTH AFRICA

Concerns and Potential Solutions

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SAFCEC
READY TO DELIVER

SOUTH AFRICAN FORUM OF CIVIL ENGINEERING CONTRACTORS

- SAFCEC's constituency's sub-sector of roads and civils contributes 70% of the total skills development levies to the Construction SETA.
- **As civil engineering contractors, we permeate every aspect of societal life by providing solutions to the developmental needs of humanity. We build South Africa's civil infrastructure:**
 - roads, bridges, tunnels and railway systems that connect communities and economies; airports, dry and sea ports, oil, gas and electricity facilities that drive commerce and industry.
 - **We build water and sanitation systems that are vital in restoring human dignity to sustain lives and livelihoods** in order to avert preventable disease and death, and recognise **water and sanitation as a basic human right** that is also a key resource that drives the economy.
- Adequate water and sanitation services are even more critical and urgent under the current COVID-19 environment.
- From an international perspective, a global economic future relies on a green and sustainable future. A broad coalition of Dutch companies have pledged their support to take sustainability as the cornerstone in their country's COVID-19 recovery plans. *"If we act now, we will have the opportunity to strengthen our economy while at the same time alleviate adverse impacts on our environment, society, people's well-being and business operations."*

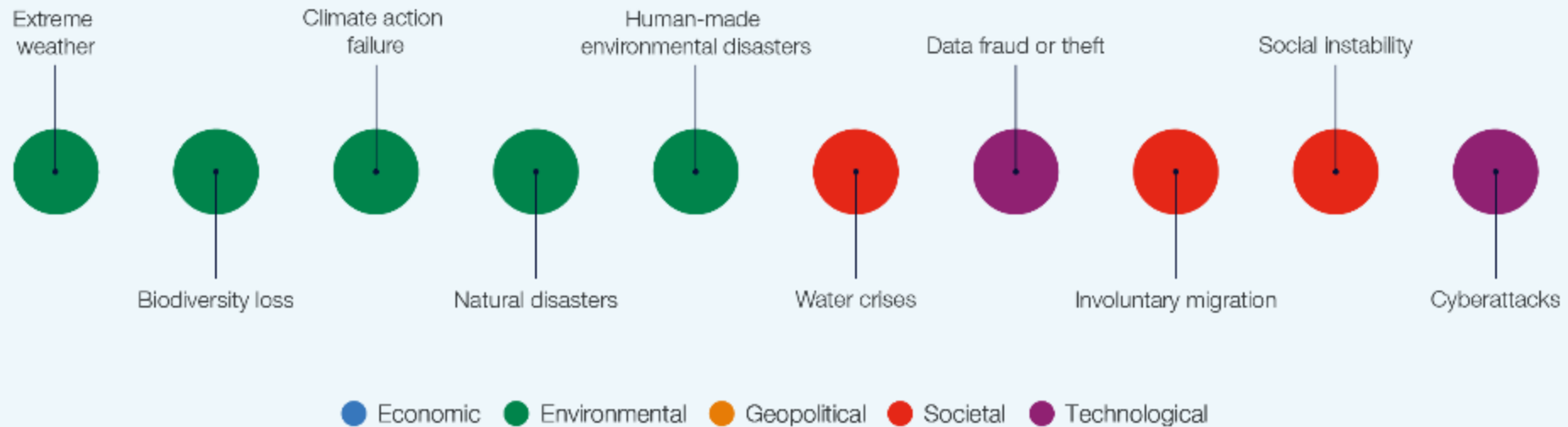
GLOBALLY 8 OF TOP 10 RISKS ARE ENVIRONMENTAL

TOP 10 RISKS OVER THE NEXT 10 YEARS

Long-Term Risk Outlook: Likelihood



Global Shapers



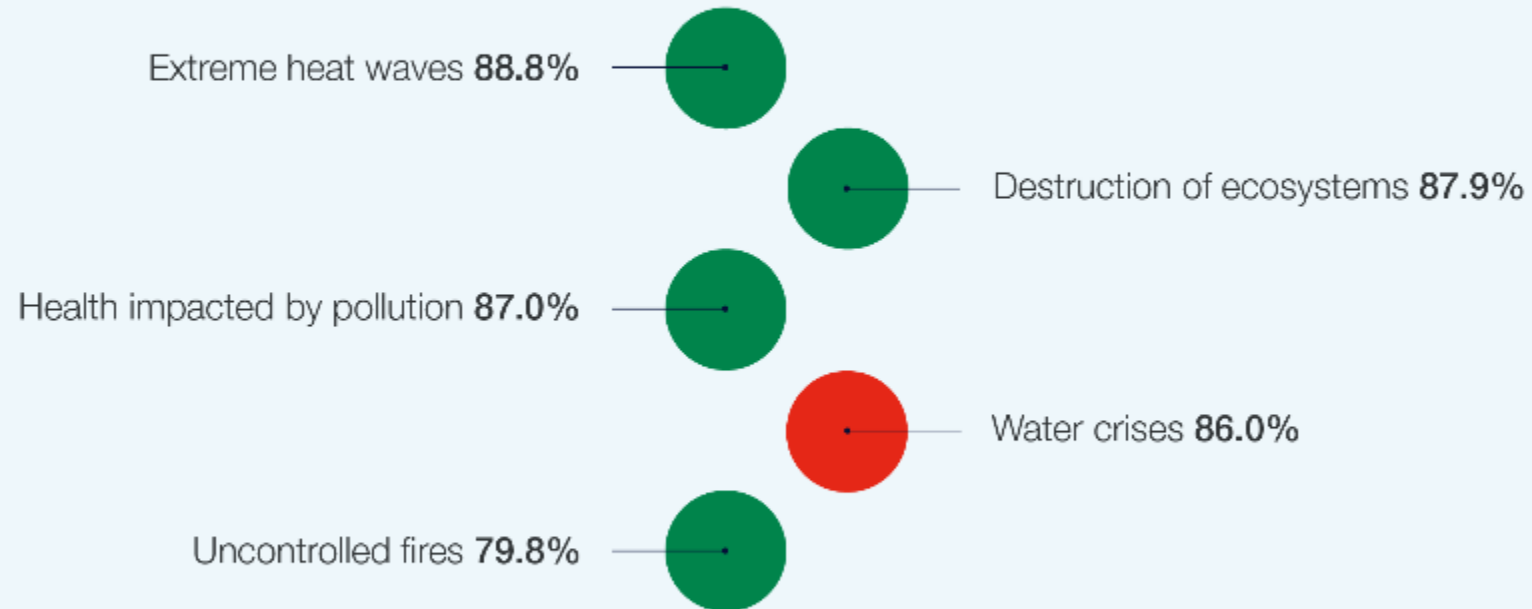
GLOBAL TOP 5 SHORT-TERM RISKS

Short-Term Risk Outlook

Percentage of respondents expecting risks to increase in 2020



Global Shapers



Global Risks Report 2020

● Economic ● Environmental ● Geopolitical ● Societal ● Technological

ENVIRONMENT IS THE **NUMBER ONE** GLOBAL RISK...

1. **ENVIRONMENT**

- Bio-diversity loss; Climate Action Failure; **Water Scarcity**; Man-made Environmental Disasters

2. **GEO-POLITICAL**

- Global Governance Failure; Inter-States Conflicts; National Governance Failures

3. **SOCIETAL**

- **Failure of Urban Planning**; Food Crisis; Infectious Diseases

4. **TECHNOLOGY**

- Adverse Technological Advances; Cyber Attacks; Digital Fraud Theft

5. **ECONOMIC**

- Asset Bubble; **Critical Infrastructure Failure**; Deflation; Energy Price Shock.

SOUTH AFRICA'S WATER SCARCITY

(NATIONAL WATER AND SANITATION MASTER PLAN 2020)

- **Water Security is one of the biggest issues/challenges facing South Africa** and the world in this 21st century. It presents a profound challenge to our social wellbeing and our economic growth.
- **Urgent measures are required to protect the river systems** as they transfer the life blood of the nation around the country.
- **Over 3 million people** still do not have access to a basic water supply service and **14.1 million people** do not have access to safe sanitation. (DWS DDG Trevor Baltzer 2019)
- Only **64 % of households have access to a reliable water supply** service
- **56% of wastewater treatment works** and **44% of water treatment works** are in a **poor or critical** condition. **11% are dysfunctional.**

SOUTH AFRICA'S WATER SCARCITY

(DWS DDG TREVOR BALZER 2019)

- More than 50% of South Africa's wetlands have been lost, and of those that remain, 33% are in poor ecological condition.
- Only 5% of Agricultural Water used is by black farmers
- 41% of Municipal Water does not generate revenue. 35% is lost through leakage
- Municipalities are losing about 1660 million m³ per year through non-revenue water. At a unit cost of R6/m³ this amounts to R9.9 billion each year.
- R33 billion more is needed each year for the next 10 years to achieve water security (R330 billion in total)

KEY CHALLENGE # 1 CORRUPTION

“Dry taps, lost jobs, polluted rivers, sickness and death. This is how the impact of corruption is measured in South Africa’s ailing water sector.”

A: Capricorn District Municipality,
Limpopo



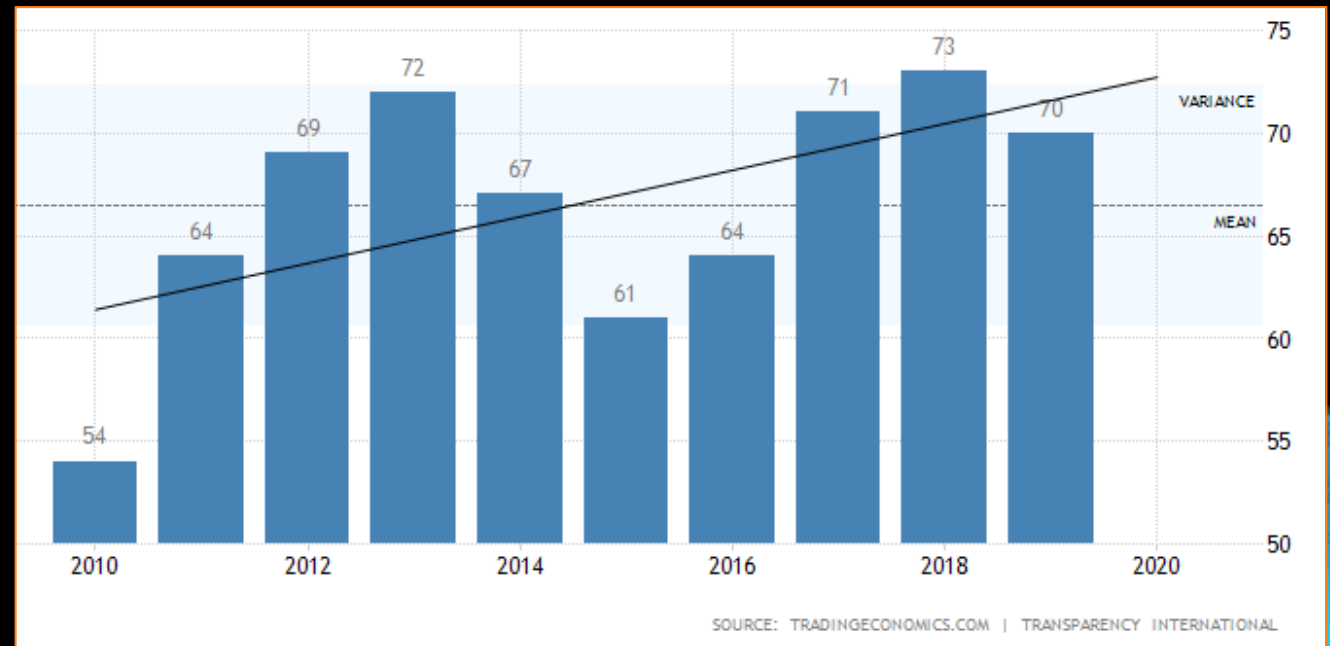
B: Vaal River pollution reported by *Simphiwe Mbokazi*,
African News Agency (ANA)



KEY CHALLENGE #1 CORRUPTION *CONTINUED*

CLEAN GOVERNANCE AND EFFICIENT MANAGEMENT

- South Africa is the 70th least corrupt nation out of 180 countries
- There is a need to move beyond the commissions of inquiry towards the prosecution of those implicated in cases of corruption and/or state capture
- Municipal and SOE governance in the water and sanitation sector remains the highest risk in the realisation of the NDP and Sustainable Development Goals



South Africa Corruption Rank
 ~ 2019 Corruption Perceptions Index - Transparency International

KEY CHALLENGE # 2 AGRICULTURAL IRRIGATION

Serious interventions needed to reduce demand by improving efficiency, adopting new technologies and reducing losses, especially in the Agric and Urban sectors

A: High Demand Systems



B: Drip system irrigation



C: Vertical Warehouse system



KEY CHALLENGE # 3 SKILLS CAPACITY

The capacity of most Water Service Authorities (WSA) and Water Service Providers (WSP) to operate, maintain and manage assets for existing infrastructure, needs URGENT attention. **Out of 278 municipalities in SA, 202 municipalities are without civil engineers.** Working conditions must be addressed to attract critical technical skills.

A: Neglected Water Treatment Works



B: Johannesburg Water



KEY CHALLENGE # 4 QUALITY SERVICE DELIVERY

56% of the over 1 150 Municipal Wastewater Treatment Works (WWTW) are in a poor and critical state and need to be rehabilitated urgently and properly maintained afterwards.

A: Sabokeng WWTW, Emfuleni (2019)



B: Stellenbosch Municipality WWTW



KEY CHALLENGE # 5 CLEAN DRINKING WATER

44% of 962 domestic Wastewater Treatment Works (WWTW) are in a poor condition and need urgent rehabilitation, this translates into poor drinking water as untreated waste water spills into and contaminates water systems. This excludes private works and industrial treatment. **Resolving outstanding water use licenses to be issued by the Department of Water and Sanitation for economic projects is critical.**

E.g. Projects under the Lebalelo Water User Association such as the Olifantspoort weir to Polokwane pipeline; De Hoop dam; Flag Boshielo dam; and water use license for the Limpopo Eco-Industrial Park dams.

A: Musina Local Municipality WWTW



B: ERWAT WWTW in Benoni



SOUTH AFRICA'S WATER SCARCITY

(LIMPOPO RIVER IN THE SUMMER RAINY SEASON)

LIMPOPO ECO-INDUSTRIAL PARK

INNOVATIVE WATER PLAN

1. Water License 22 million M³/year Raw Water: = Average 6%/year of river flood water going to Mozambique (Not from Aquifer)
 - ✓ 2 million M³/year for 7 523 rental housing units
 - ✓ 5 million M³/year for Musina Municipality
 - ✓ 15 million M³/year for Industrial use
2. 3 Earth Dams, storage capacity 40 million M³



Limpopo River during flood season (LEIP)

SOUTH AFRICA'S SUSTAINABLE GROWTH TRAJECTORY

SA National Treasury 2020

Economic transformation, inclusive growth and competitiveness:

- **Transformation of ownership** through new SMMEs:
 - All construction contractors in the LEIP will be new SMME's of Level I or II
- Higher **value-added manufacturing** coupled with **skills training**
 - LEIP beneficiation and agricultural industries will provide 50 835 direct jobs plus 238 416 indirect & induced jobs
- **New Business opportunities:**
 - LEIP will incubate new businesses and provide them 5-year contracts
- Inclusion of **women and youth as a priority**
 - Minimum 60% of all job opportunities will be for women and youth.

HUMANISING INFRASTRUCTURE DEVELOPMENT

In the early 1990s, a young medical doctor set up practice in Orange Farm to provide medical services to a population of over 200 000 people in the informal settlement.



- Her objective was to treat the community and educate them on the importance of hygiene and sanitization to keep healthy
- She found a half built shack and began working with some men from the community to replace it with properly built medical rooms to treat people

Orange Farm, Soweto 1989

Lily Franey/Gamma-Rapho/Getty Images

HUMANISING INFRASTRUCTURE DEVELOPMENT

- Realising that educating and treating a community with **poor living conditions and no access to water and sanitation** was not going to improve health conditions in the area, she championed for improved housing and service delivery to replace the shacks that exacerbated health problems.
- With no previous construction experience and only **a heart for change**, she set about partnering with industry experts to start Motheo Construction in 1997

*"This is a truly South African company. It is built on a model where **everybody works together for its benefit**. We are still true to our original model. We send in highly skilled professionals, get them to work with young people to carry things forward and leave skills behind. "*

~ Dr Thandi Ndlovu | 05 September 2016



Dr Thandi Nlovu | 1953 - 2019

Freedom Fighter. Mother Figure. CEO. Doctor. Women Empowerer. Political Activist. Exiled. Philanthropist. Change Agent. Entrepreneur. Thought Leader.



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