



Water Quality and the Transformative Riverine Management Programme in Durban

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eThekweni Municipality Context

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- Municipal extent: 2 556 km²
- 95 000 ha (950km²) of Durban Metropolitan Open Space System
- Unique and challenging topography – steep valleys and gorges
- Population: 4.1 million
- Global biodiversity hotspot
- Length of rivers : 7400 km
- 18 River Catchments
- 16 Estuaries
- 98 km of coastline
- Over 587 urban informal settlements (1/4 of city pop)
- ~ 160 settlements within environmentally sensitive areas and high flood risk zones



- Annual temperature increases likely to be twice the global average (3.0°C to 5.0°C by 2100).
- Increased frequency and severity of extreme weather events, like heat waves, droughts, rainfall events (flooding, lightning, tornadoes)
- Increased seasonal variability of rainfall (downpour – 78mm increasing to 100mm or 1/10year to 3/10)
- Sea-level rise of +2.75 mm per year

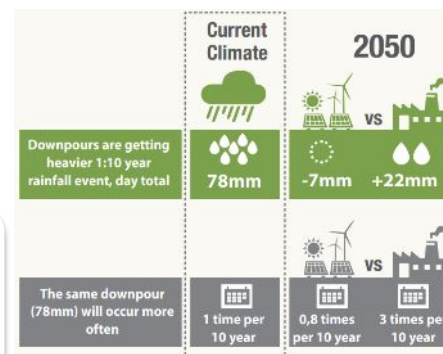
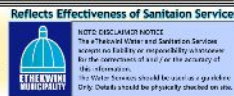
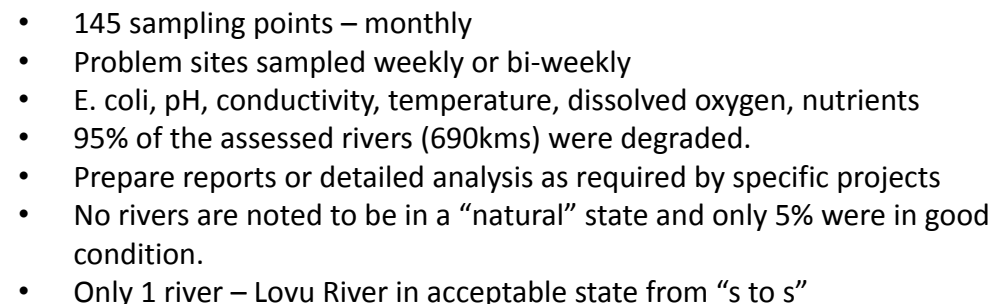


Figure 14: Rainfall projections for Durban



Durban Rivers Source to Sea Pollution

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EVOLUTION OF THE TRMP (2009 -)

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Factors that worsened flooding

- Invasive alien plant material and solid waste blockages at culverts and bridges result in overtopping, diversion and causing significant and costly damage to infrastructure.
- Poor infrastructure maintenance
- Illegal river encroachment and infilling
- Stormwater concentration
- Illegal river diversion

Sihlanzimvelo River Cleaning Project:

- RSWM Dept started an integrated watercourse management programme using community co-operatives clean and manage 5km stream stretches in Inanda, Ntuzuma, KwaMashu (INK) and Umlazi
- Created current 106 co-operatives with 8 to 10 members
- Started with 295km of rivers now up to 600km
- They were also tasked with reporting sewer leaks, blocked manholes, illegal dumping and pollution.
- Current Operational Cost: R46 million per year
- Estimated additional cost: R116 million per year is needed to cover the full 1200km of streams suitable for Sihlanzimvelo creating 1500 jobs
- Source of funds: Currently operational budget (RSWM) Engineering



EVOLUTION OF THE TRMP (2009 -)

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Poor River Management + Flooding



Sihlanzimvelo Stream Cleaning Project



Team Effort



Implementation Plan



TRMP





Business Case for the TRMP

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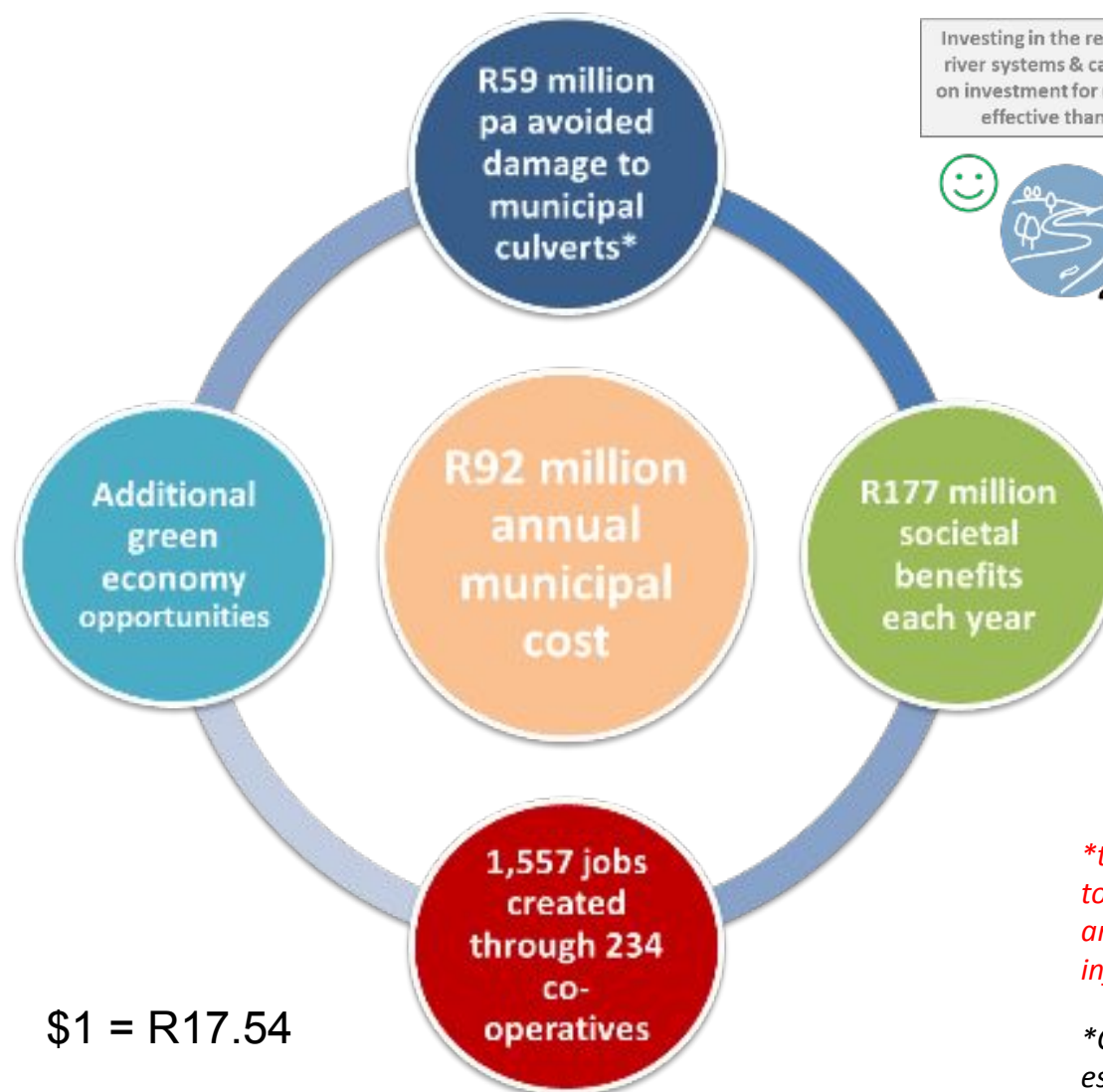
The Business Case for Upscaling Sihlanzimvelo on Municipal Land

**R1 spent = R2.60
municipal & societal
benefits (incl. coastal)**

Priority Actions for the City to Advance the TRMP

- 1 Establish a municipal 'hub' for TRMP
- 2 Upscale the existing Sihlanzimvelo Programme
- 3 Support existing line department, community and NGO/NPO initiatives
- 4 Extend the Support Programme to all external stakeholders across ALL rivers

1,168km of rivers on municipal land



Investing in the restoration and maintenance of river systems & catchment shows good returns on investment for municipality, as it is more cost effective than replacement and repairs



\$1 = R17.54

**this excludes damage to sewers, watermains and other municipal infrastructure*

**Correct as per estimates in Jan 2021*



Transformative Riverine Management Programme Concept

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eThekweni Municipality in Durban is establishing the Transformative Riverine Management Programme (TRMP), which works in partnership with all affected stakeholders to collectively rehabilitate and sustainably manage all riverine areas within its boundaries.



The transformative climate adaptation approach of the TRMP seeks to:

- (1) **Transform** the human and economic relationship with rivers as part of a
- (2) **Sustainable** approach to addressing climate change vulnerability and building resilience by
- (3) **Incorporating** nature-based solutions, community ecosystem-based adaptation (CEBA), and
- (4) Green/circular **economy** considerations, with the
- (5) Intent to **scale-up** existing riverine management initiatives and **create** new opportunities.

River Projects

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In addition to Sihlancimvelo, the city has been a partner in a number of other riverine management projects with organisations including:

- eThekweni Conservancies
- Green Corridors
- Use-It
- Palmiet River Rehabilitation Programme
- Adopt-a-River
- DUCT
- Umhlatuzana River Catchment Forum (NPO)
- Umgeni-uThukela Water (Parastatal)
- WildTrust – WildOceans
- Municipal Line Department Projects
- eThekweni Palmiet TRMP
- University of KwaZulu-Natal (UKZN)
- Durban University of Technology (DUT)
- Transnet National Ports Authority (TNPA)





Citizen Science - Enviro Champs

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River Citizen Science involves community participation in river-based scientific research, contributing to data collection, analysis, education and awareness.





In Summary...

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- The **TRMP** is a **proactive, integrated response** to Durban's environmental challenges, aiming to improve public safety, ecosystem health, and community livelihoods by transforming how riverine systems are managed.
- TRMP projects working together will create **a more resilient, healthy, and inclusive urban environment** in Durban, contributing to long-term ecological and community benefits.
- **Addressing the challenges** facing the TRMP requires integrated planning, sustained funding, capacity building, and active community participation.

- **Financing mechanisms** - need to be structured to ensure long-term, adequate and sustained availability of funding.
- There are **many opportunities emerging** to link green economy enterprises to riverine management investments.
- Requires **businesses to invest** in marginalised individuals and communities and to grow small enterprises outside of their profit-making focus. These contributions are made through Corporate Social Investment (CSI) or Enterprise Development initiatives





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<https://c40cff.org/projects/ethekwini-durban-adaptation>