

Overcoming water scarcity for good?

Querying the adoption of desalination technology in the Knysna Local Municipality



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DESALINATION IN TIME OF CRISIS

- Water governance response to threat of scarcity = enrolment of managerial and technological innovations
- Desalination promise = decouple economic production from freshwater resources
- More than 18,000 desalination plants operate in over 150 countries with a total capacity of more than 80 million m³ of water per day
- South African municipal desalination market shown growth due to drought crisis in the Eden District Municipality in 2009

DROUGHT TO DESALINATION IN THE KLM RESEARCH AIMS AND OBJECTIVES

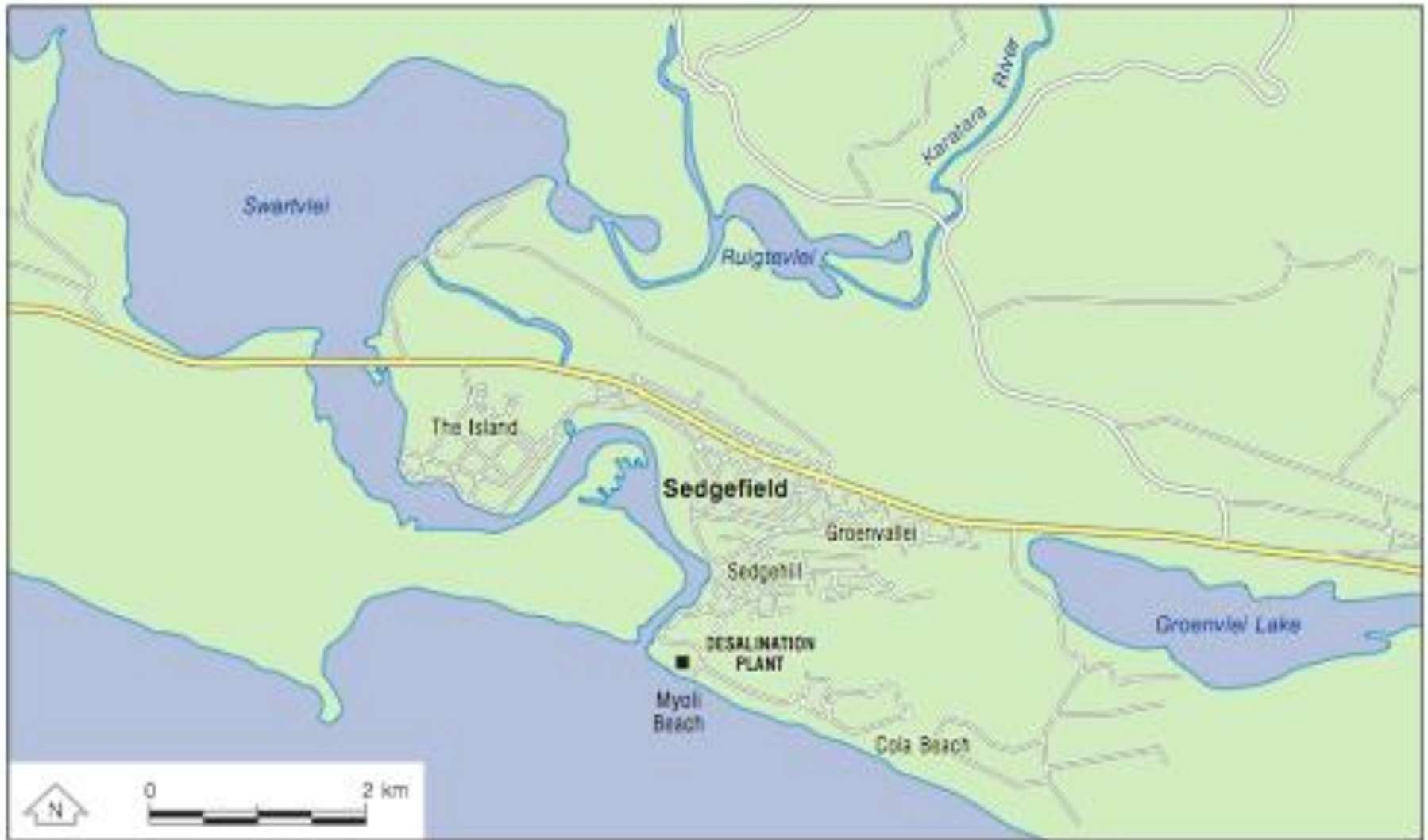
- Examining the movement from drought crisis to desalination solution (representation, historical materiality, consensus, consequence)
 - ‘what, how, by whom, why and to what end was desalination adopted?’
1. Representation of 'drought crisis'
 2. Adoption of desalination solution (representation and governance mechanisms)
 3. Historical water governance
 4. Evaluating the desalination solution -urgency-funding-problems-costs
 5. Parallel movement from Crisis to Opportunity

URBAN POLITICAL ECOLOGY

LENS ADOPTED IN THIS STUDY:

- Urbanisation as a co-production between human and non-human nature
- Politicise understandings of observed environments
- ‘Natural’ crisis is produced through nature as well as politics, history, representation, technology
- Concerned with surfacing politics and power informing crisis, as a challenge to the dominant treatment of ecological crisis as nature ‘induced’

SEDGEFIELD WATER FLOWS

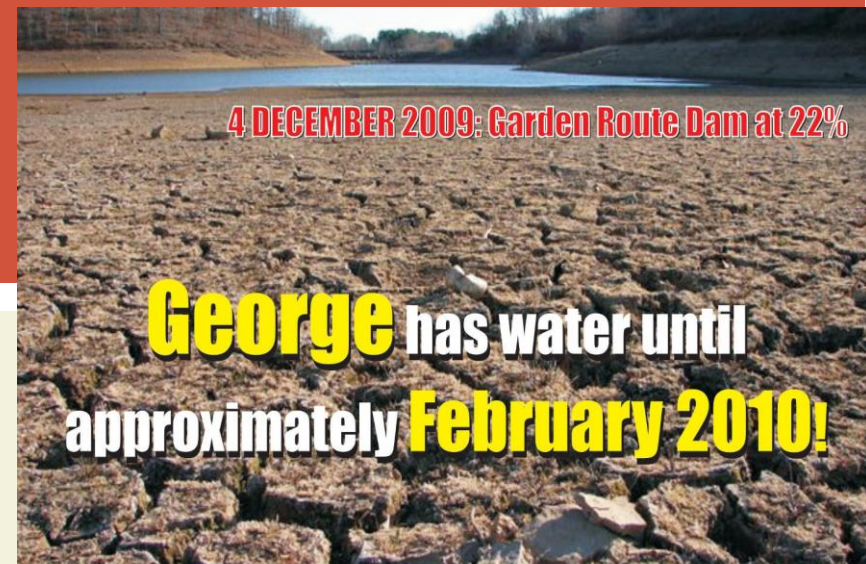


KNYSNA WATER FLOWS



CRISIS REPRESENTATION

- An act of God
- A 'deviation from the natural norm'
- The influence of 'climate change'
- A real urgent threat

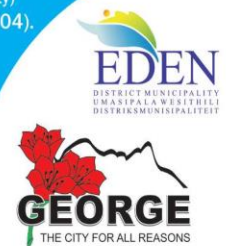


The towns of **George, Knysna, Mossel Bay and Plettenberg Bay** have been declared **Disaster Areas** due to the current drought. The Southern Cape has experienced the **lowest** recorded **rainfall in history**. (Records date back 132 years.) Rainfall to date for 2009 is +/- 40% of the annual average.

The **water situation** remains **extremely serious**. Hot temperatures and below normal rainfall is forecast for January, February and March 2010. The re-use of waste water is going ahead. It is scheduled for completion in March 2010. This project will supply **30% of current demand**. Rain is desperately needed to supplement the level of the Garden Route dam.

Short and long term plans to increase water supply have commenced. Boreholes will be drilled. The Malgas Pumping scheme and the raising of the Garden Route dam spillway (to provide more storage capacity) are going ahead as per the original planning (in place since 2004).

The plea is not **just** to save water. We must change habits inside the house! It will be inconvenient. **Careful consideration** must be given before using **each drop of water**.



REPRESENTATION OF SOLUTION

- “There is No Alternative”
- Future security
- Insurance Policy
- Green Development



INTERGOVERNMENTAL ENGAGEMENT

Month/ Year	Date	Event
Jan-09	27	Water Crisis in Eden - EDM discussions with Rashied Khan
Apr-09		Task Team report on the Water Shortages in Sedgefield/ Knysna
Jul-09	8	Meeting between the KLM and PDMC on Knysna water shortage (followed by letter of support on 12 October 2009)
	15	Approval is granted for the utilisation of the sum of R11 292 035, 85, a portion of the 2006 disaster funding
	27	Meeting between KLM and DWA representatives to discuss allocation of BIG funding to the value of R5 million
Aug-09	26	First EDM 'drought crisis meeting'
Sep-09	7	Letter/ project funding report sent from KLM to Dr. H. Fast chairperson of the 'drought crisis meetings'
	28	Letter from KLM to A. Bredell
Oct-09	1	Signing of the Sedgefield Desalination contract
Nov-09	27	Declaration of KLM as Local Disaster Area

BUILDING CONSENSUS FOR DESALINATION

- Exceptional institutional arrangements
- Declaration of a Disaster
- Exceptional Environmental Legislation
- **Reliance** on the insistence of urgency and the necessity to act against the threat of nature to ensure water security



HISTORICAL MATERIALITY OF CRISIS SURFACING A SILENCE

- Historical augmentation scheme began in earnest in the latter part of 2004
- A plan to provide water for Sedgefield up to the year 2030
- Crisis of supply and the precarious location of the existing RWTW
- The entire scheme development was ultimately cancelled in July 2008
- The identified historical 'dimensions of crisis' remained unresolved.
- An ahistorical and externalised representation of crisis informed the solution adoption

CONSEQUENCES OF CONSENSUS FUNDING SOURCES FOR KNYSNA

Funding Source	Anticipated Amount (ZAR)	Motivation for allocation	Outcome
National Treasury	R22,200,000	Application for disaster funding for re-use of effluent and groundwater exploration project	Funding approved, with attached conditionality to spend on identified projects and within the financial year of allocation – Financial year 2009-2010
National Treasury	R17,900,000	Application for disaster funding for completion re-use of effluent and groundwater exploration	Funding approved, with attached conditionality to spend on identified projects and within the financial year of allocation – Financial year 2010-2011

**URGENCY NARRATIVE – FUNDING – ATTACHED CONDITIONALITY →
PROBLEMS FROM THE OUTSET**

CONSEQUENCES OF CONSENSUS ACCOUNTING FOR LONGER-TERM COSTS

Electricity costs

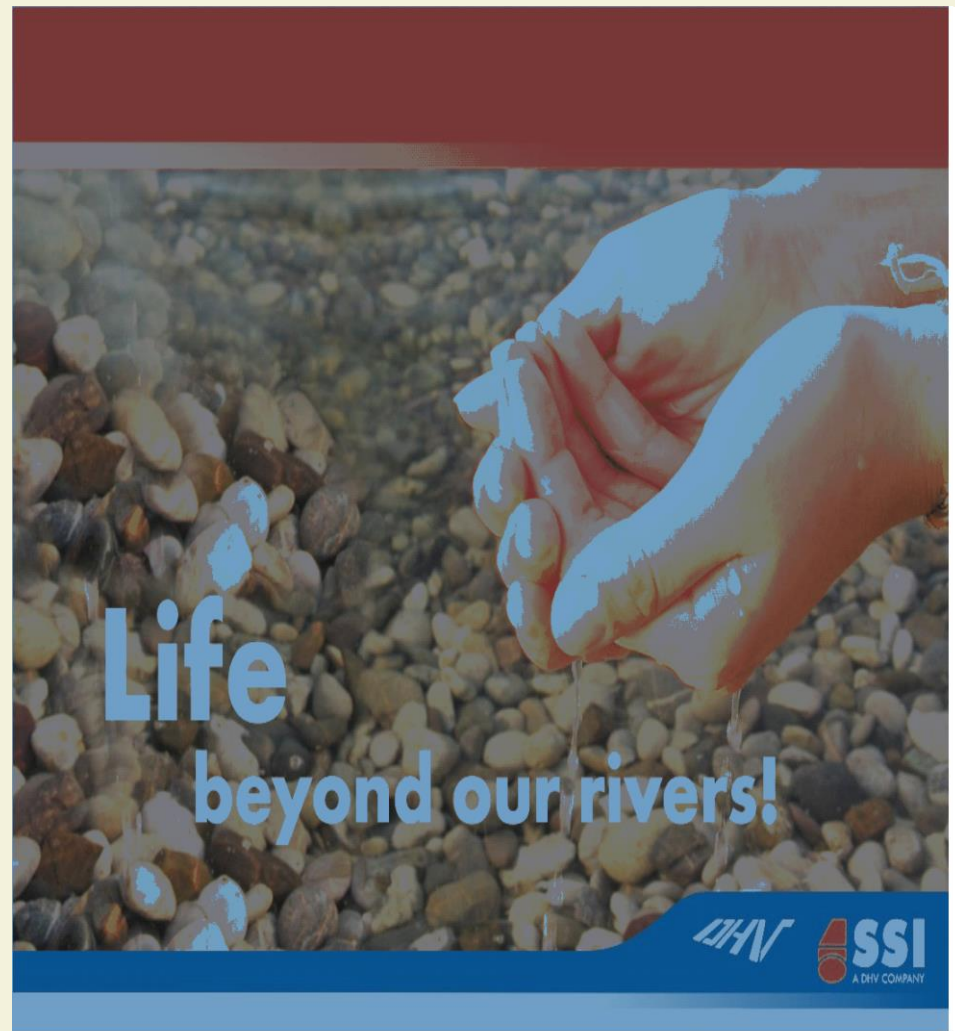
Cost component	Total Units	Cost per unit	Total Cost
Consumption	1191	R0. 38	R452. 58
Network Access	550 kV A	R26. 52	R14, 586 .00
Bulk Demand Charge	10 kV A	R138. 11	R1, 381. 10
Basic		R500. 00	R500. 00
Total cost			R16, 919. 68 + VAT

Mode of operation

- Option A: Full production mode ...
- Option B: Limited production mode
- Option C: Zero production preservation mode

CRISIS TO OPPORTUNITY

- Innovation as Development
- Selling the Sea
- Conjunctive Use
- Funding & Urgency



CONCLUSIONS

1. Scarcity is about nature as well as the politics of representation, decision-making and vested interests
2. Crisis representation informs promoted solutions
3. Silencing the historical materiality of crisis
4. Crisis representation lead to funding allocation but with conditionality
5. Conditionality introduced problems in the solution
6. Crisis to opportunity as a parallel movement
7. The circularity of a denial

THANKS

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