

Beyond water security

**What will a real water
crisis look like?**

Mike Muller

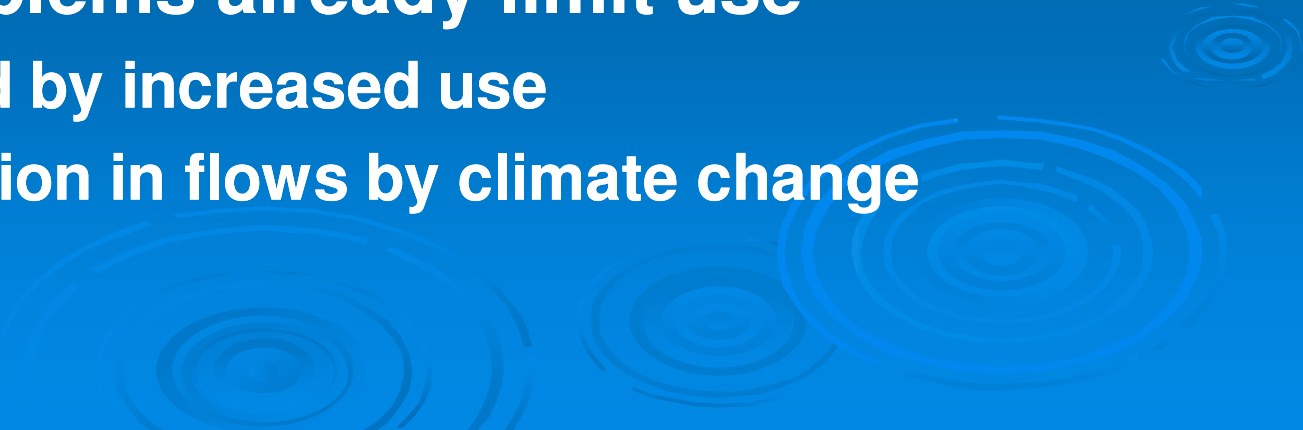
**Visiting Adjunct Professor
Wits Graduate School of
Public and Development Management**



DBSA Research Agenda

- DBSA in water:
 - partner, financier, advisor, integrator, implementer
- DBSA policy research looking at key water issues
 - focus on water as a natural resource
 - supporting the economy and society
 - water services addressed as users and impactors of resource
- Most of the team are here:
 - **Marlene vd Merwe-Botha (WaterGroup)** water quality challenges
 - **Laila Smith(Mvula Trust)** municipal regulation and compliance
 - **Eiman Karar (WRC)** challenges of capacity and innovation
 - **Schreiner (Pegasys)** reality check on current strategies
 - Missing: **Hilmy Sally and Barbara van Koppen (IWMI)**
 - looking at an integrated approach to rural redress issues addressed outlined in this presentation

Dimensions of water in South Africa

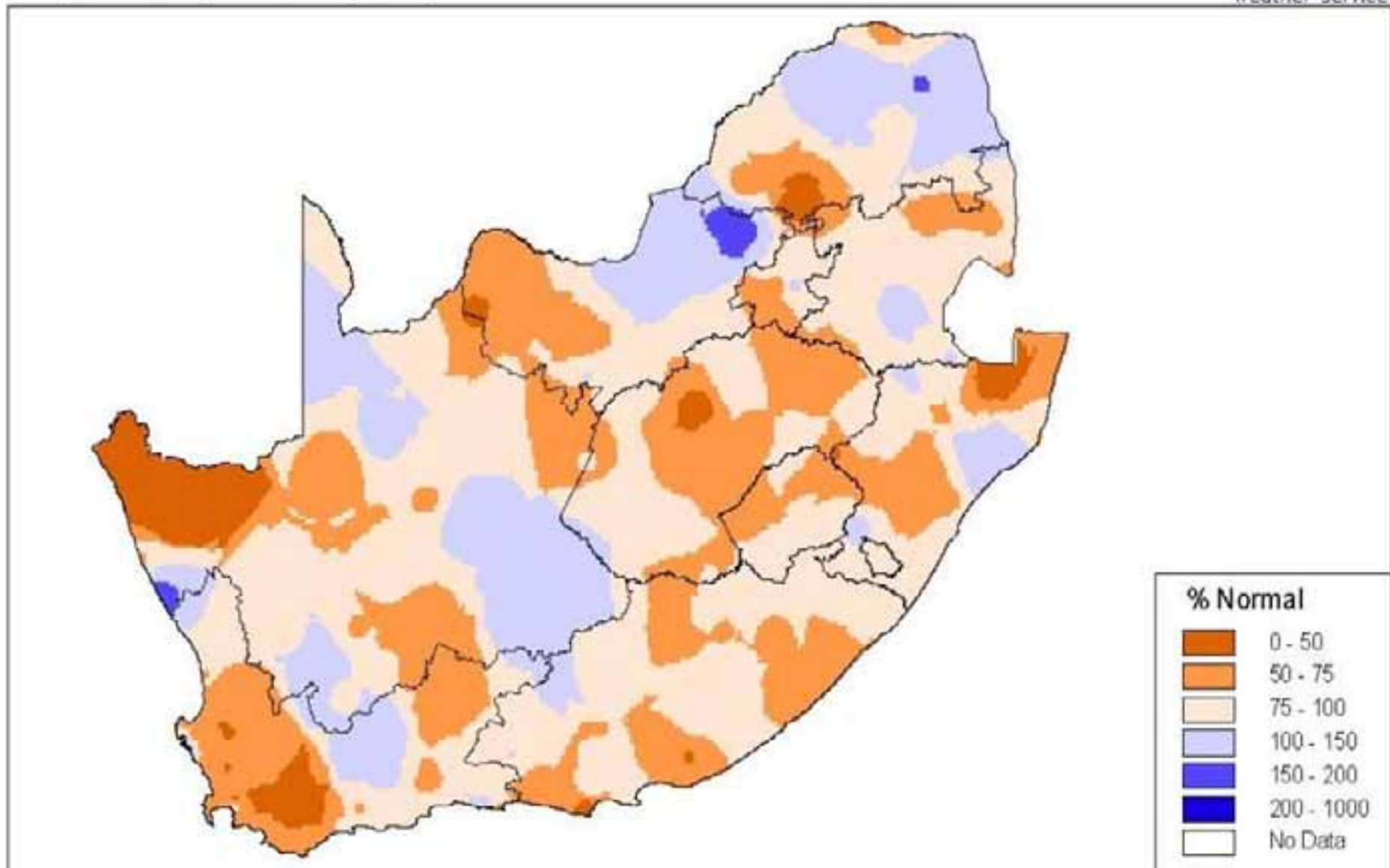
- **Dry country (150 driest out of 180 in world)**
 - **Probably going to get drier (climate change)**
 - **“Normal” variability, difficult to predict**
 - (el Nino 1997/8)
 - but going to be more variable
 - and more difficult to predict
 - **Quality problems already limit use**
 - aggravated by increased use
 - and reduction in flows by climate change
- 

Percentage of Normal Rainfall for the Hydrological Season October 2003 to May 2004

(based on preliminary data)



South African
Weather Service

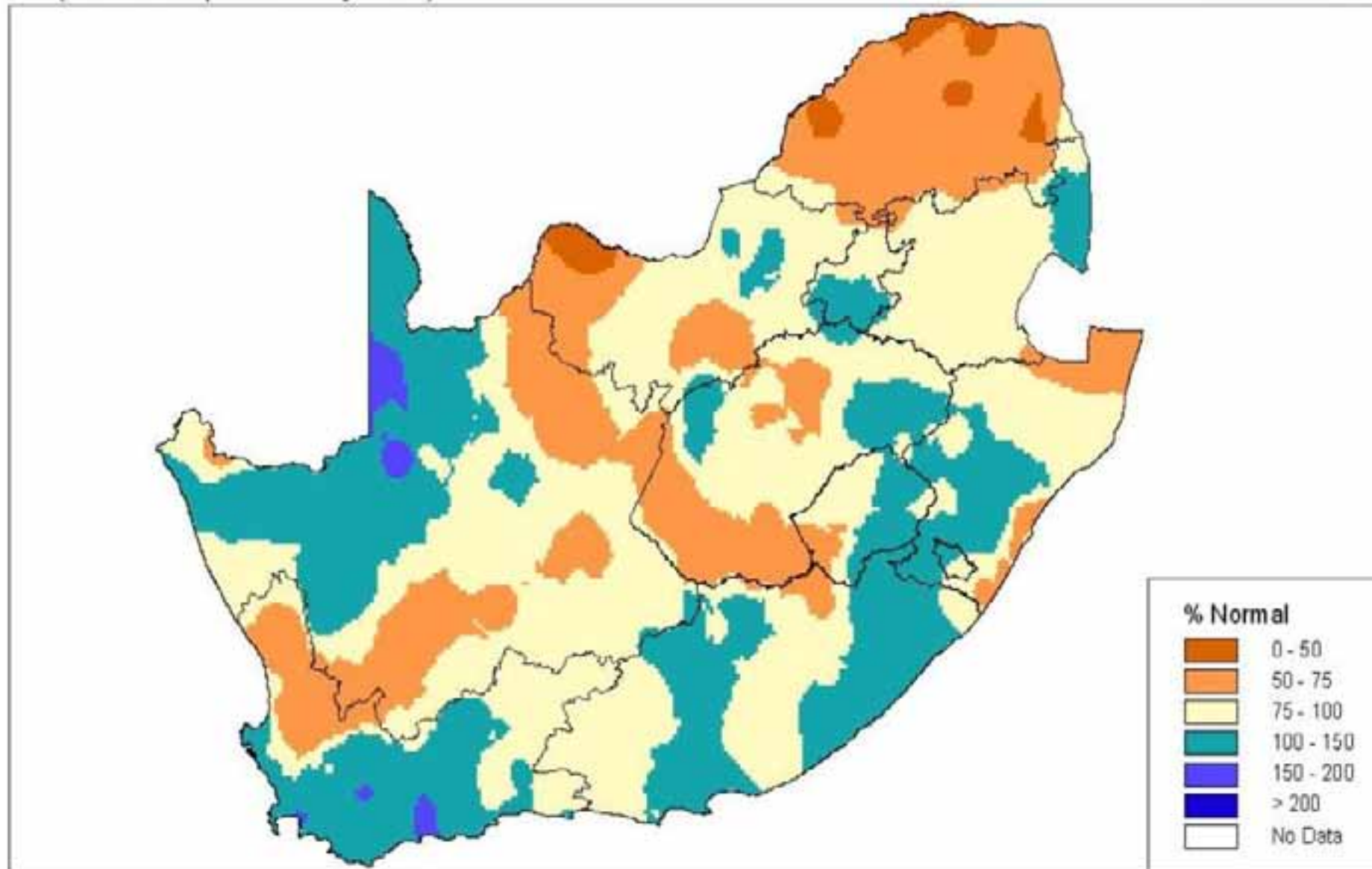


Percentage of Normal Rainfall for the Season July 2004 to June 2005

(based on preliminary data)



South African
Weather Service

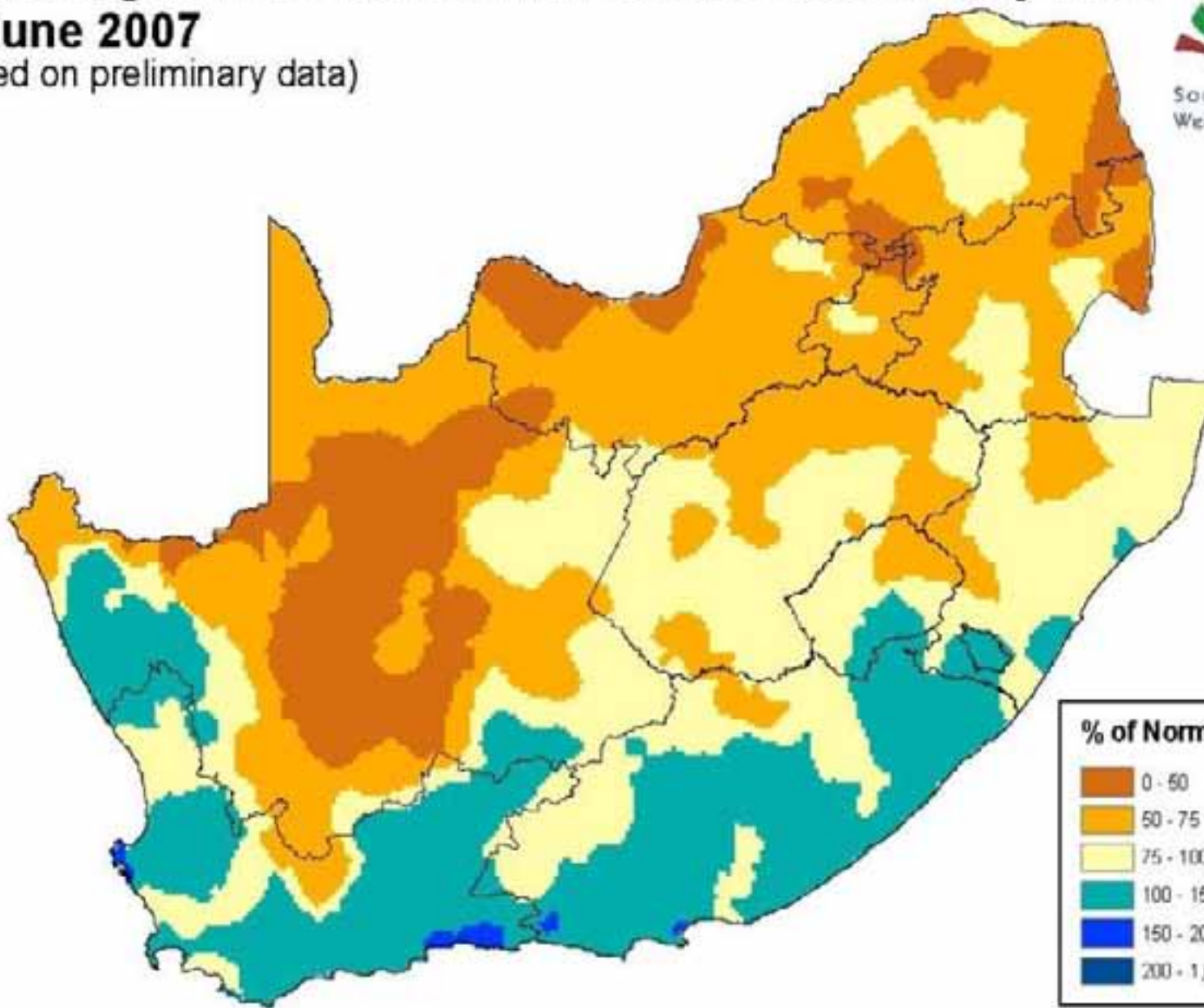


Percentage of Normal Rainfall for the Season July 2006 to June 2007

(based on preliminary data)

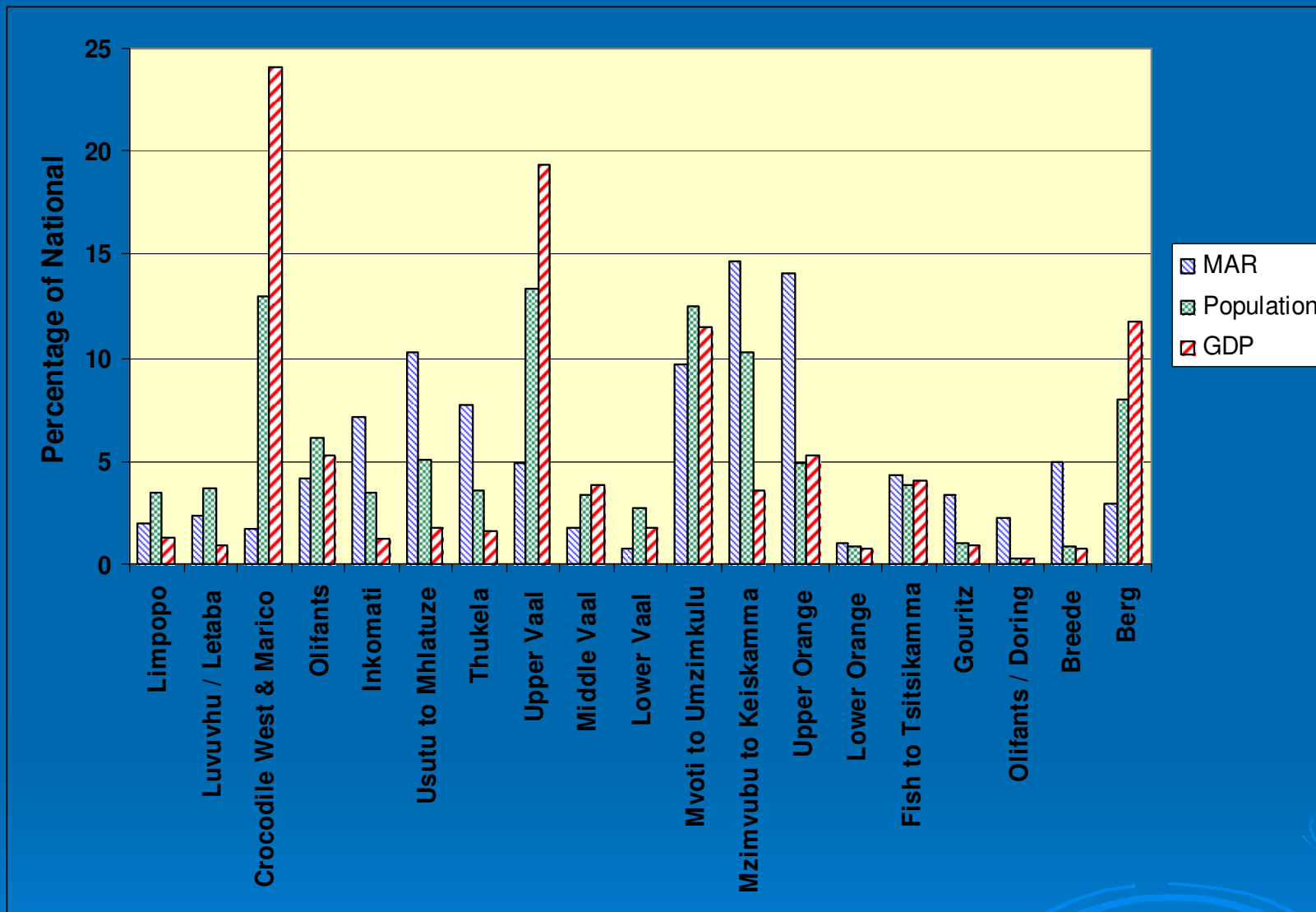


South African
Weather Service



Dimensions of water in South Africa

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 - but going to be more variable
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- Quality problems already limit use
 - aggravated by increased use
 - and reduction in flows by climate change
- **Economic activity not in same place as water**
- **People are not in the same place as water**



Production, people and Water

Comparison of the mean annual runoff (MAR), population and economic activity (GDP) per water management area

Water: both productive & destructive

**a source of production,
health, growth &
cooperation**

AND...

**a source of destruction,
poverty and dispute**






'Water Security'

reliable availability of acceptable
quantity & quality of water for health,
livelihoods & production

AND...

acceptable level of
water-related risks

Water security

- “the reliable availability of an acceptable quantity and quality of water for health, livelihoods and production, coupled with an acceptable level of water-related risks.”
 - Is this the major challenge??
 - Says nothing about
 - relations with neighbours
 - aspirations as a society
 - challenges to a sustainable better life for all.
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What are the challenges?

- **Domestic water supply?**
 - 100 lcd requires 4% of the country's water resources
 - (if half goes down the drain 2%)
 - Just a matter of money and management
- **Sanitation needs technical and financial choices**
 - capital cost of “flush for all” around R125 billion
 - R360bn for ESKOM? But MIG only R8.7bn?
 - running costs would be R9 billion, 35% of local government equitable share of R25 billion
(flush toilets don't consume water, need drains and treatment)



What are the challenges?

- **Enable farmers with information to plan ahead**
 - mix of annuals and perennials limits single year losses
 - unlike electricity, we can store water if we look ahead (preparation for the 2010 drought starts now)
 - **Sustain the natural environment**
 - A public good and global commitment
 - A source of economic activity, tourism etc.
 - **Keep the wheels of industry turning**
 - make sure that they know how much / little they can have
 - big users can always go to the sea
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The nature of a Water Crisis






The nature of a water crisis:

- **Normally creeping, not dramatic**
- **Dispersed not national**
- **Often solves itself – it will rain, eventually**

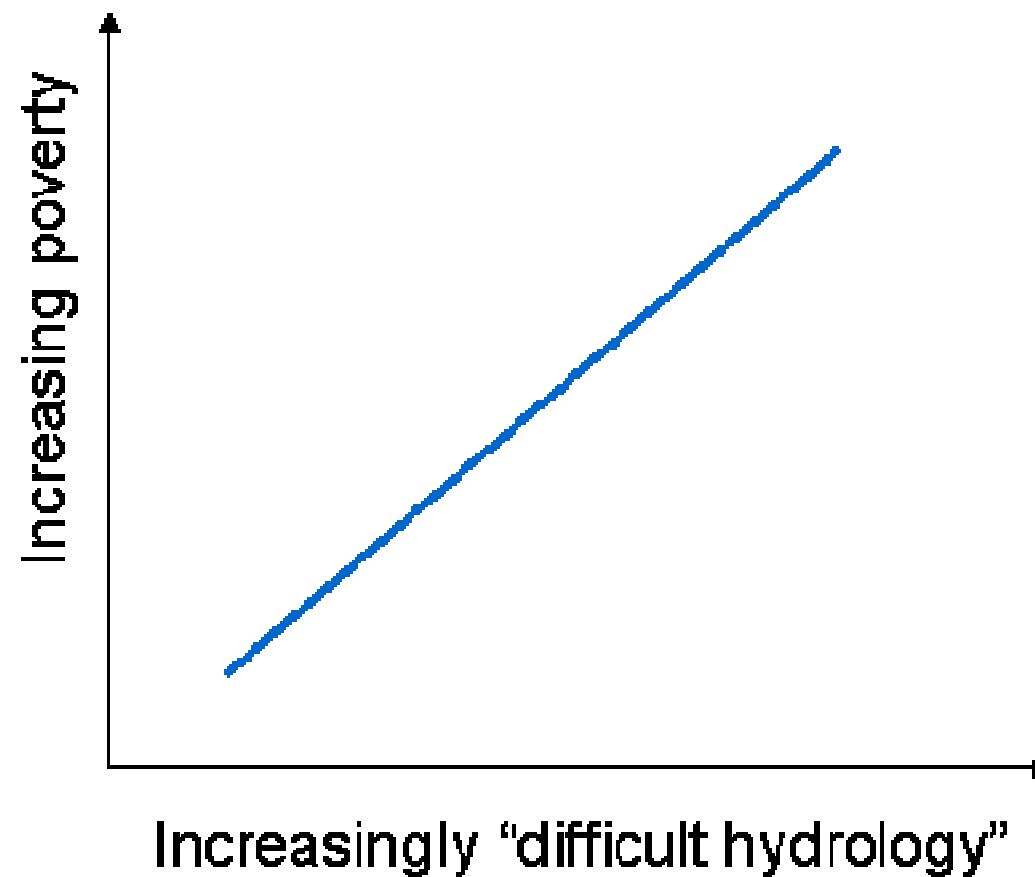




The nature of a water crisis:

- **No single big challenge that can't be beat**
 - **Poor strategy makes society more vulnerable**
 - **Just muddling-through misses opportunities**
 - **Could lead to a failure to achieve water security**
 - **Need a strong and coherent water sector**
 - working with economic and social sectors
 - particularly in rural context
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Poverty & Hydrology



Many societies haven't got it right

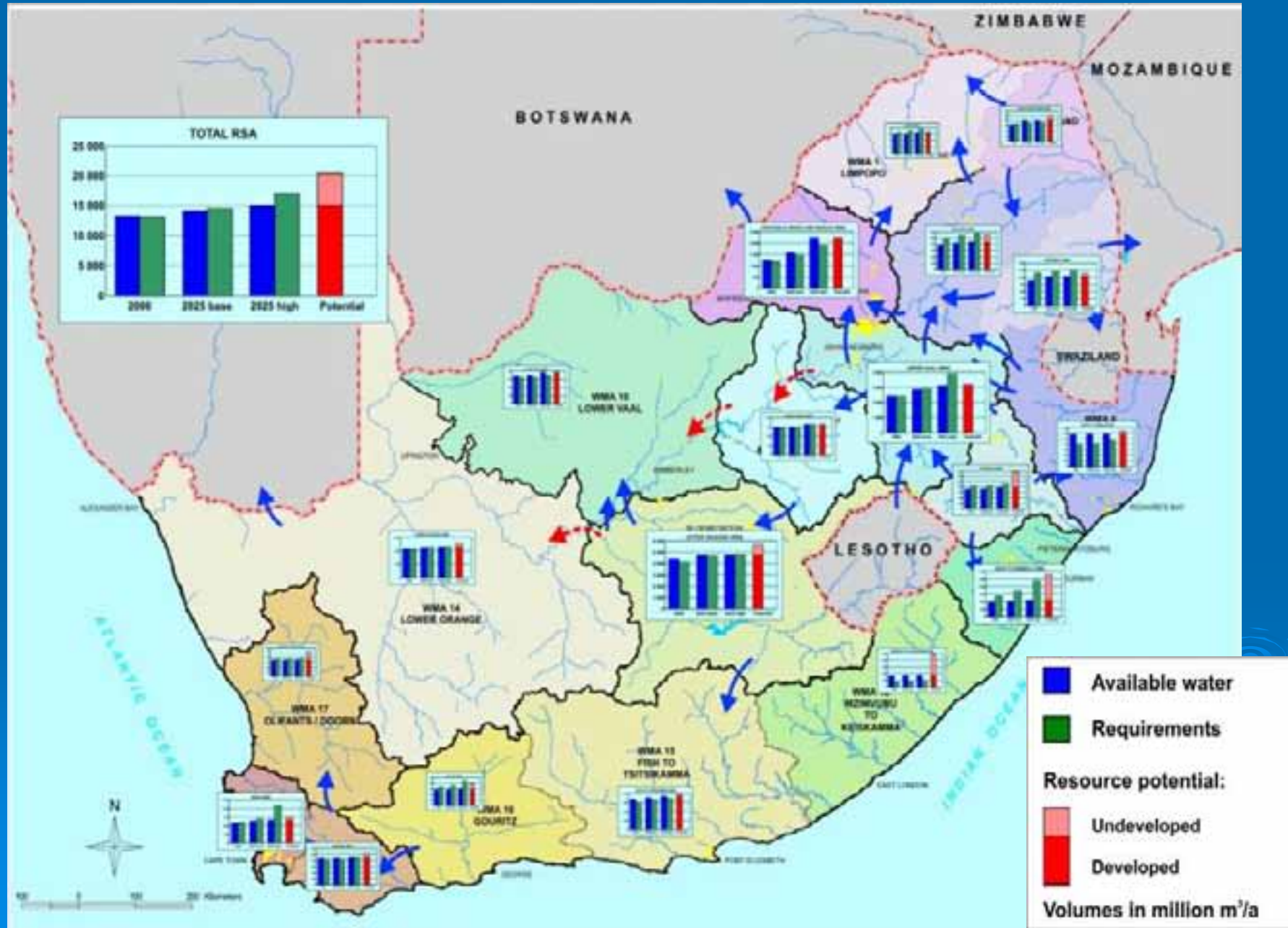
- **India and China – on the edge**
 - **Cities in conflict with country-side**
 - **Water resource declining, quality threatened**
 - One is making plans to deal with it,
 - Other is heading for disaster
 - **USA, Spain, & Mediterranean - similar challenges**
 - **Many are on unsustainable development paths**
 - **Adjustment costs money**
 - rich countries can buy their way out of trouble
 - poorer countries must be smart or perish
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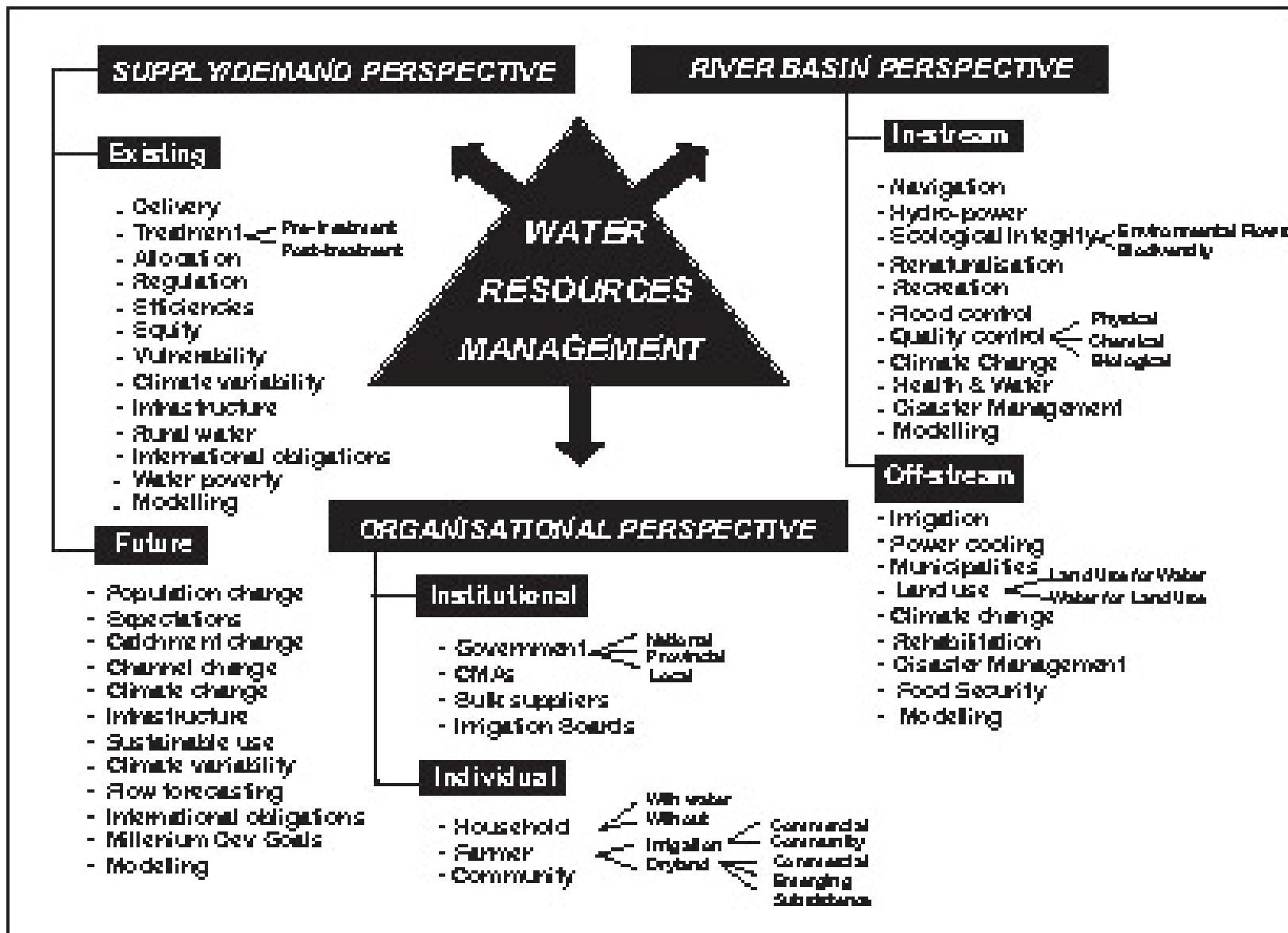
Challenge

- **Understand what is going on**
- **Understand the choices –**
 - and options that are not sustainable
- **Take the right decisions**
- **Implement the right decisions**


- **Or else!**
 - North West: groundwater management failure street protests
 - Limpopo: user management failure leaves many without water
 - Makatini: sugar or jobs?
 - Ethekwini: delay in dam, 2010 vulnerable to drought

2025 Water reconciliation scenarios

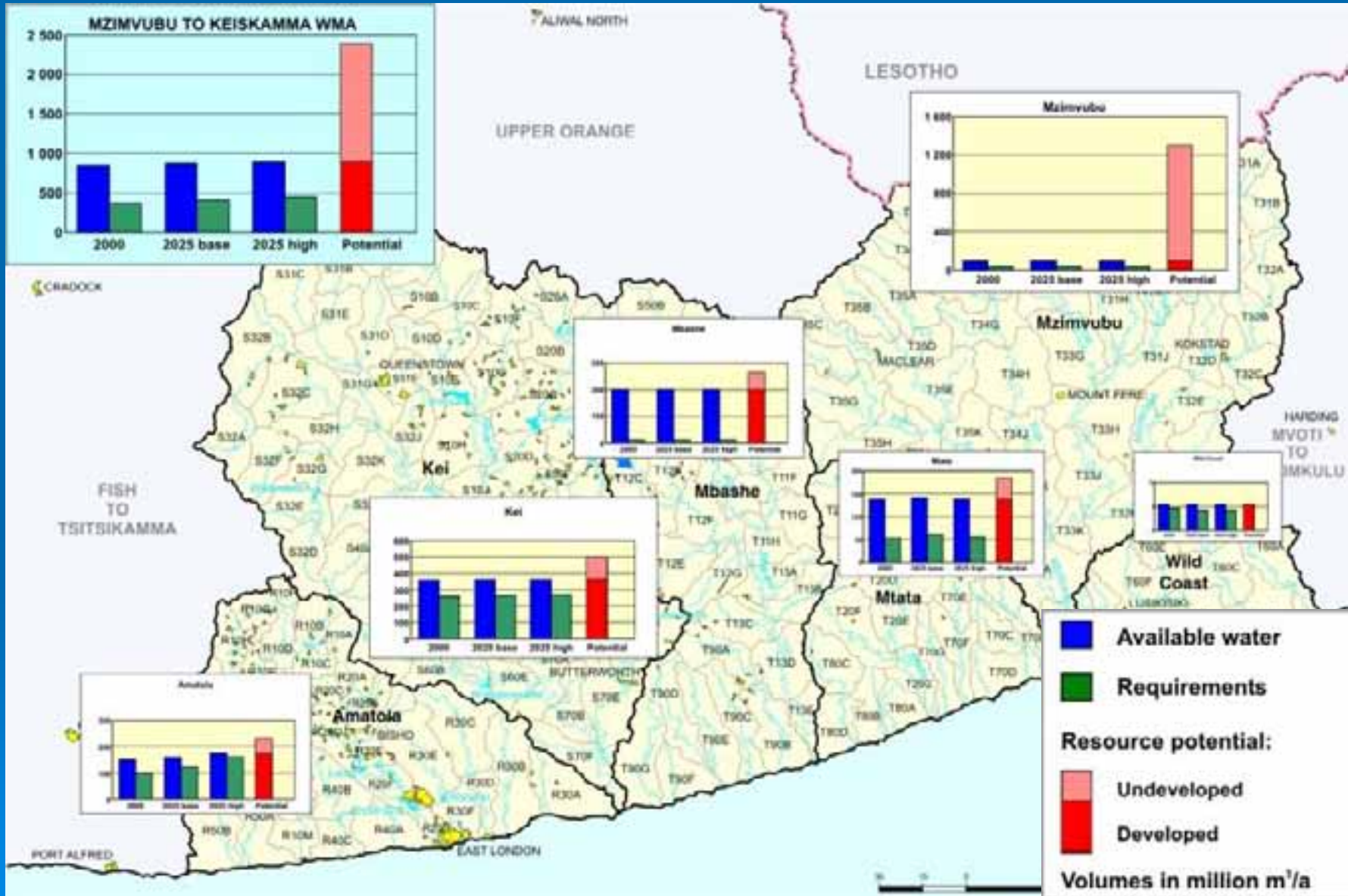




Scarcity as an opportunity!?

- example of Singapore
 - even less water per person than South Africa
 - neighbour Malaysia tried to blackmail Singapore over water supply
 - Singapore responded by innovating
 - Getting rich by not having water
 - New technology
 - Management and academic leadership
 - Taking a place (that could have been South Africa's) as a water management leader
 - (perhaps we could still get there)
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WMA 12: MZIMVUBU TO KEISKAMMA - WATER RECONCILIATION (FUTURE)



Scarcity as an opportunity?!

- Too ambitious?!
- Should we simply ensure that
 - all our people have safe water services
 - ensure that they have safe and convenient sanitation that does not damage public health or the environment
- But beyond that, can we ensure that
 - water shortages do not constrain existing economic activities
 - we can cope with natural variations, floods and droughts
 - we don't find ourselves fighting with our neighbours
 - other sectors understand the constraints imposed by water as well as the opportunities it offers?




South Africa's water crisis?

Poor strategic water management decisions mean:

- Failure to create as many jobs as we could have
- Failure to increase incomes
- Economic activity constrained by water quality
 - Cancelled sports events
 - Tourists stay home
 - People get ill, needlessly
 - People pay more than they need to for water
 - Disagreements with neighbours undermine other cooperation
 - Coal burnt because regional hydropower not used
 - Expensive desalination because of low water use efficiency
- Public money spent cleaning up after private companies
- Dependent on foreign expertise because HRD not done
- Allow a few to close off opportunities to many

So, managing water security is no big challenge

- If we can, as a society, manage to organise the knowledge, design and implement effective responses
 - But, if we don't, we contribute to a larger national crisis
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The potential crisis:

Our ability to manage scarcity and environmental constraints will be a major determinant of South Africa's competitiveness and future prosperity.

