




URBAN HYDROLOGY: WATER IN THE CITY OF TSHWANE  
High Performance Centre, University of Pretoria  
23 – 24 January 2014

# INTEGRATED CATCHMENT MANAGEMENT

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## INTEGRATED CATCHMENT MANAGEMENT PERSPECTIVES AND ISSUES

Some key questions and issues:

- What is our understanding of integrated catchment management?
- Is it our business?
- What are the success factors?



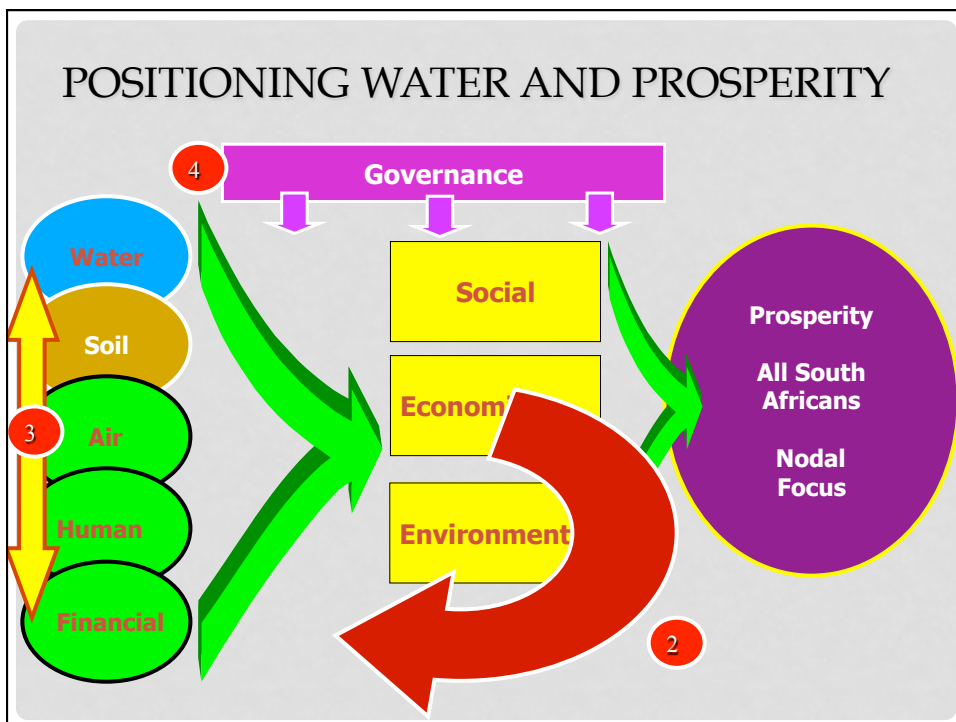
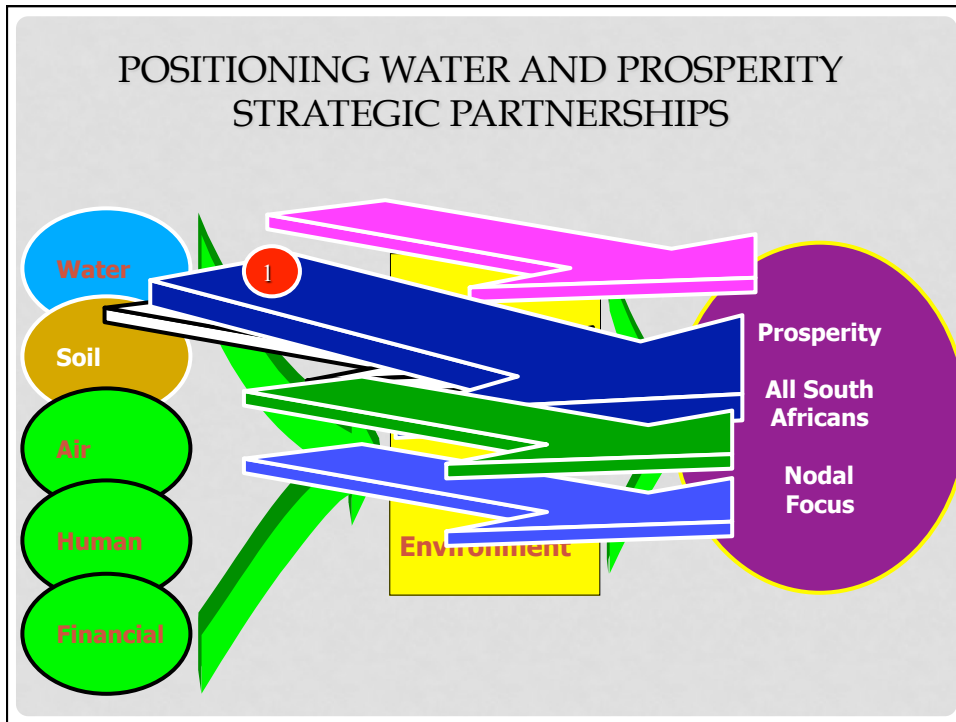
## 1. UNDERSTANDING INTEGRATED WATER MANAGEMENT (IWM)

- **IWM versus ICM**
- **Core IWM streams and dimensions:**
  - Outcome/developmental agenda
  - Extended water governance model and approach:
    - Infrastructure plus operations and maintenance
    - Life cycle
    - Value chain
    - Governance, programmes, technology
    - Business principles
  - International water management
  - Alignment of water management actions
  - Spatial: supply; catchment
  - Sector mobilization, partnerships and accountability

## 1.1 ULTIMATE WATER OBJECTIVE

**'The care of human life and happiness and not their destruction is the first and only legitimate object of every good Government.'**

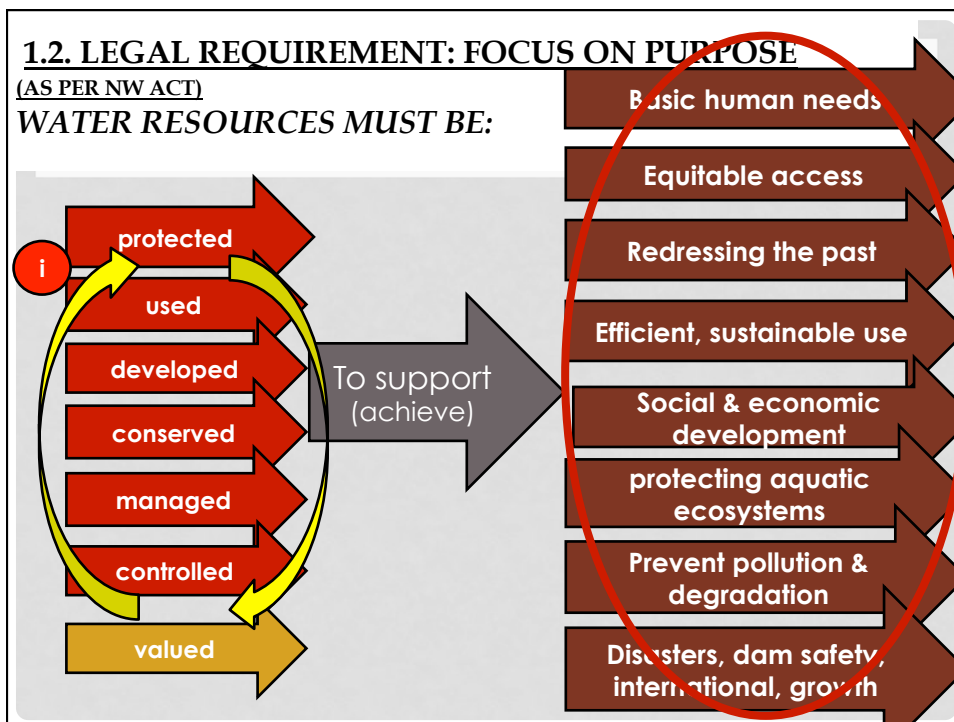
**Thomas Jefferson**

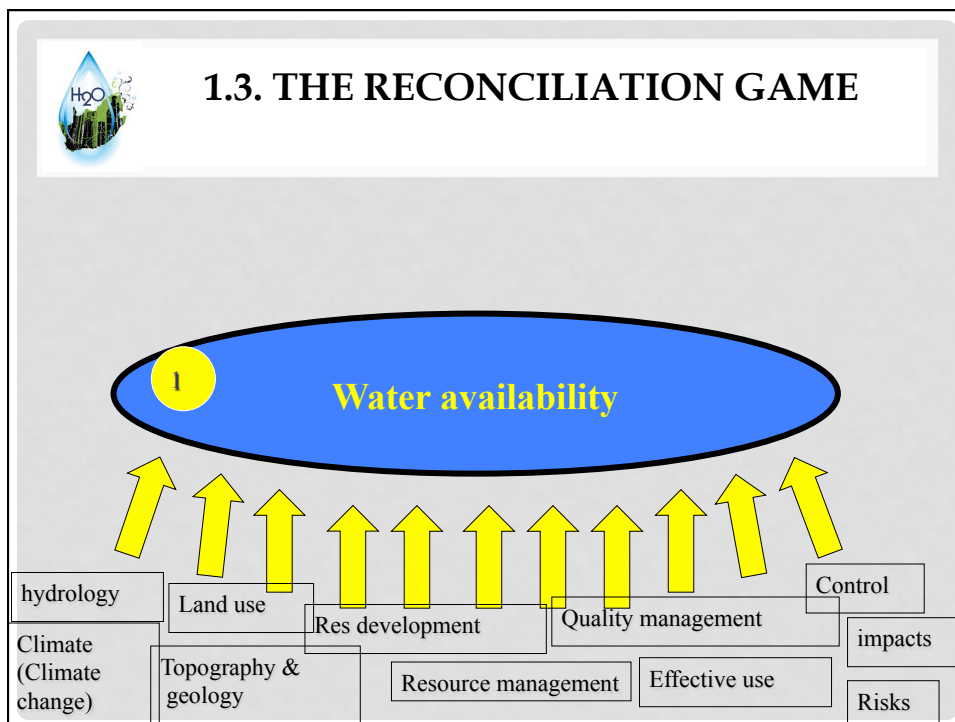
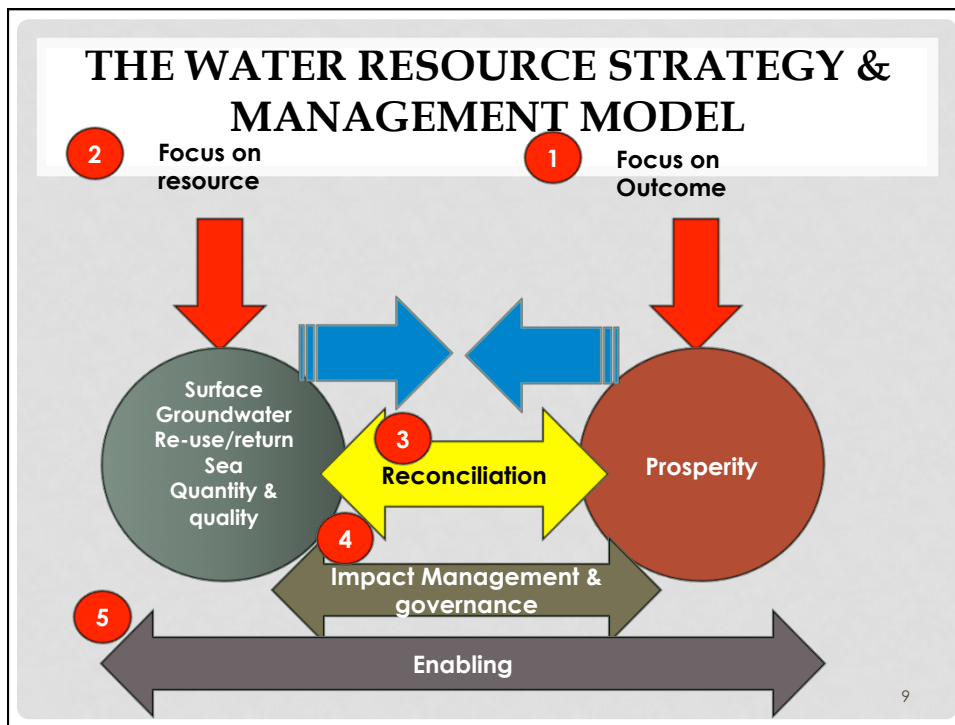


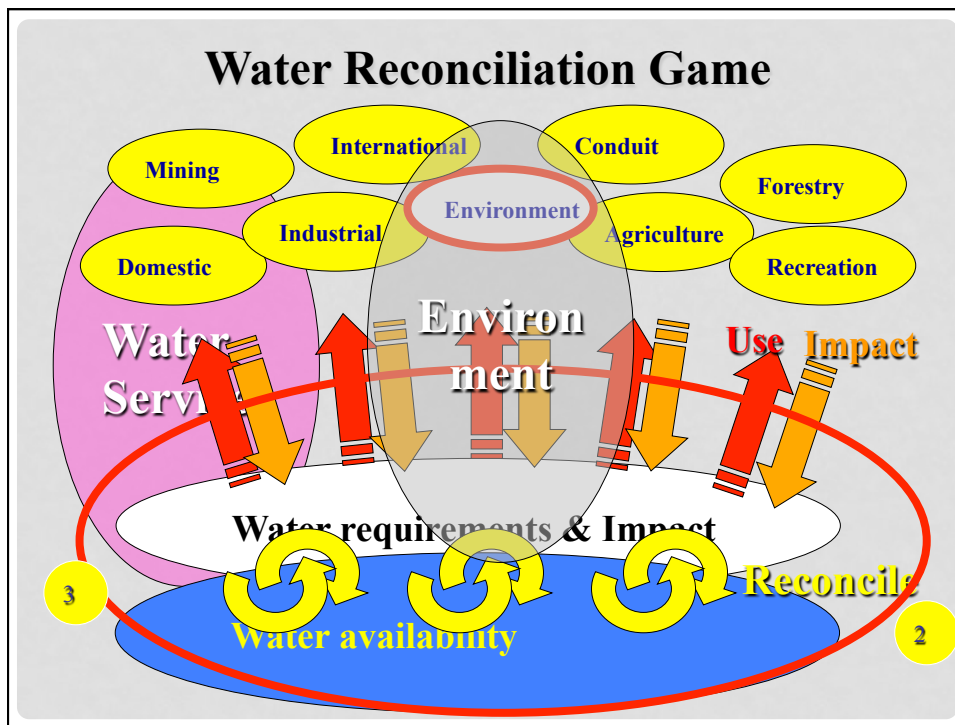


## MANAGING WATER WITHIN A DEVELOPMENTAL AGENDA

- *Responding to and align with National Development Planning Process and Macro Strategies*
- *Post 2015 Water Agenda (SDGs)*
- *Centralizing water as a strategic and critical developmental resource*
- *Establishing sector partnerships and sector accountability*
- *Introducing integrated planning and integrated governance*
- *Introducing sector water footprints (social, economic and environmental)*



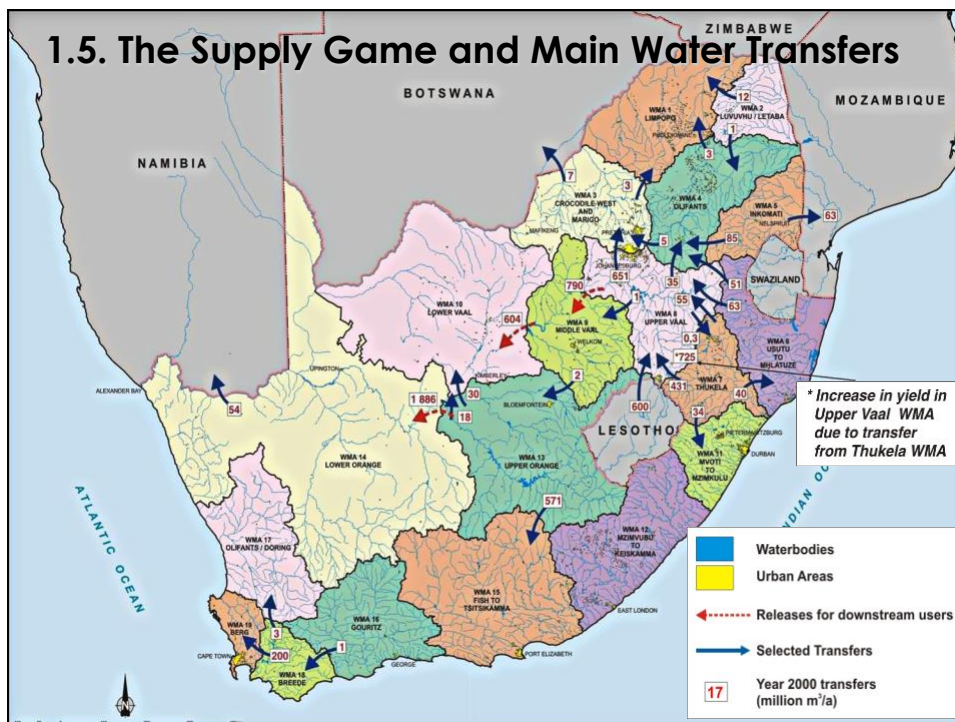






## 1.4 INTERNATIONAL CONTEXT: WATER RESOURCE IMPLICATIONS

- Four of our main rivers are shared with 6 neighbouring countries.
- International basins cover 60 % of SA land area.
- Contribute 45% of country's total river flow.
- These areas support  $\pm$  70% of gross domestic product and similar proportion of population.
- Several international inter-catchment transfers and inter-country systems have been introduced (including LHWP).
- International liaison:
  - Neighbouring States & SADC
  - AFRICA (AMCOW)
  - Global





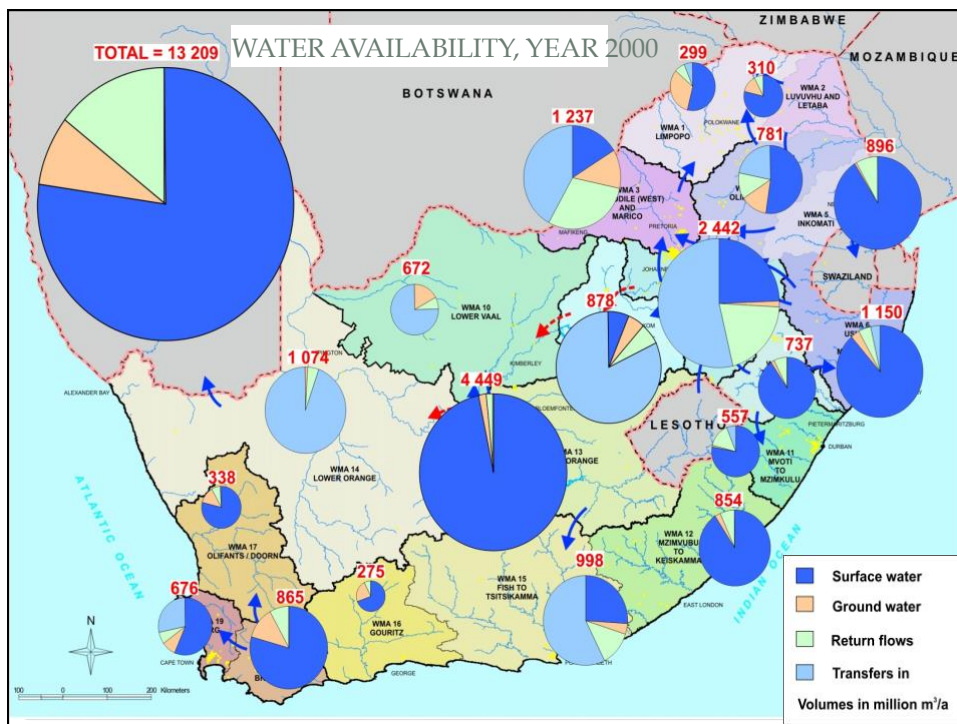


## 2. WATER CHALLENGES

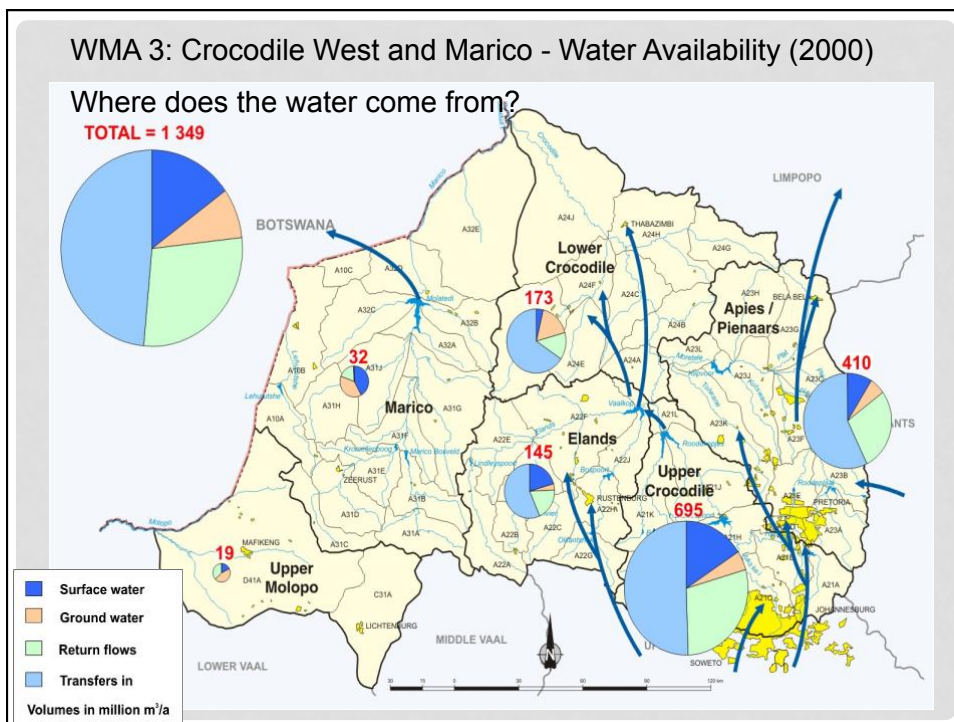
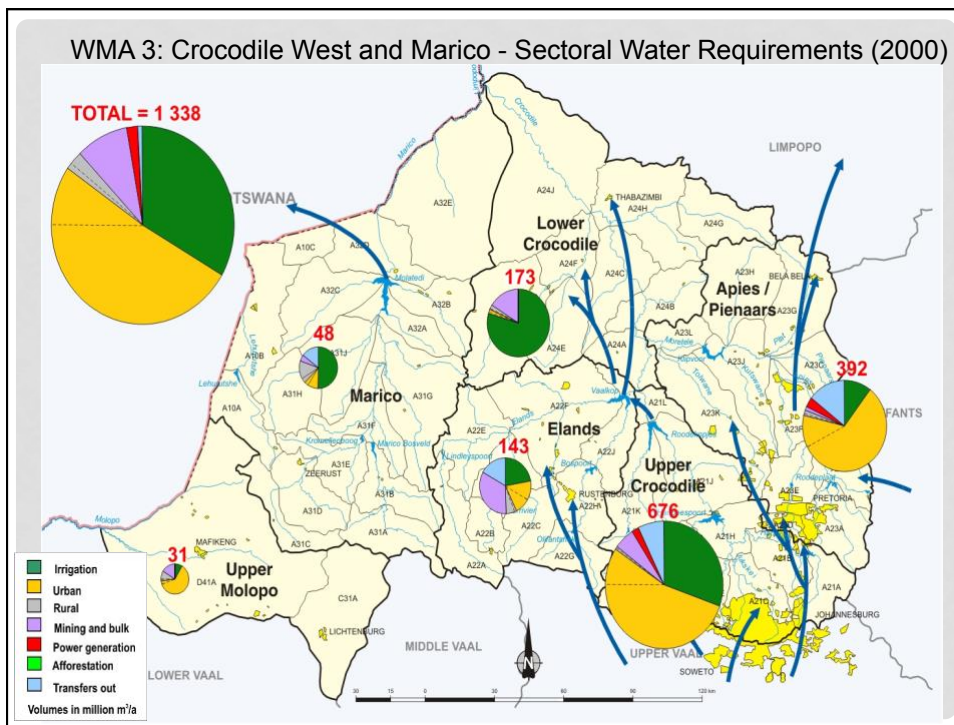
- Water availability
- Water security
- Water quality and pollution
- Health
- Ecosystems
- Urban river utilization (green corridors and lakes)
- Operations and maintenance/functionality
- Social and equity issues
- Cost and viability
- Disaster management
- Climate change

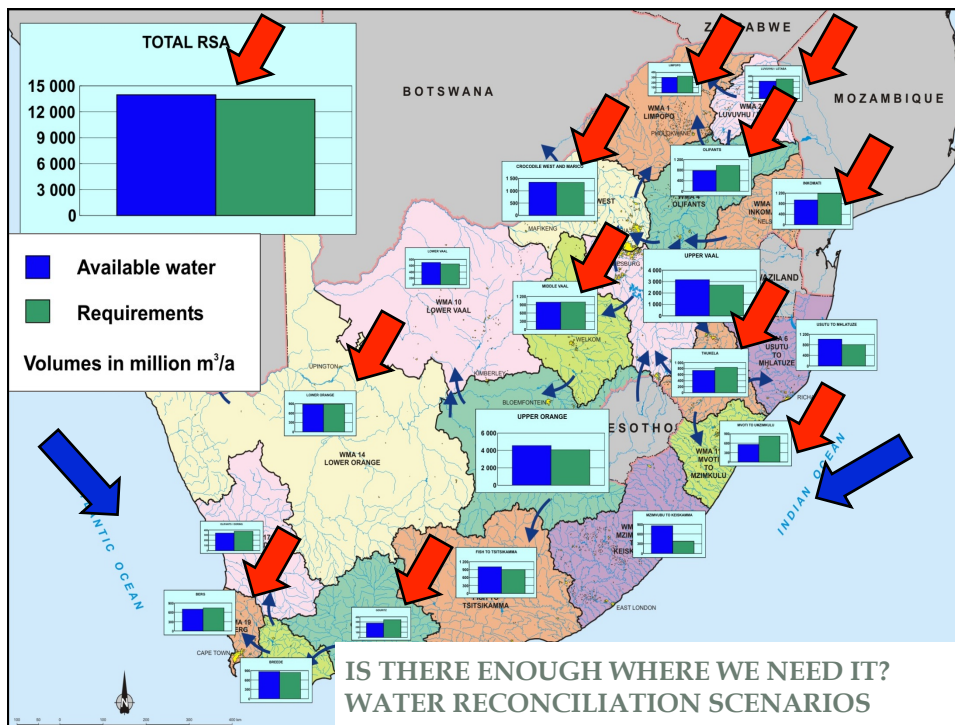


**Need Smarter water management and Governance**









### 3. INTEGRATED CATCHMENT MANAGEMENT: WATER MANAGEMENT APPLICATION

- Hydrology and run-off
- Resource development
- Systems management and optimization
- Water quality management (pollution management)
- Ecosystems management
- Recreation
- Disaster management (floods)
- Resource integration
- Water quality and quantity integration
- Land use and water management
- Conflict management
- Participatory management
- International management (shared rivers)



## INTEGRATED CATCHMENT MANAGEMENT: URBAN HYDROLOGY

- Increased run-off
- NB: water balance
- Storm water management
- Disaster management (floods)
- Water Quality management
- Ecosystems
- Recreation
- Resource development and ownership (dams)
- Systems management
- Systems hydrology: Sabie Catchment – 80% of run-off in upper 20%, all base flow in upper 85%

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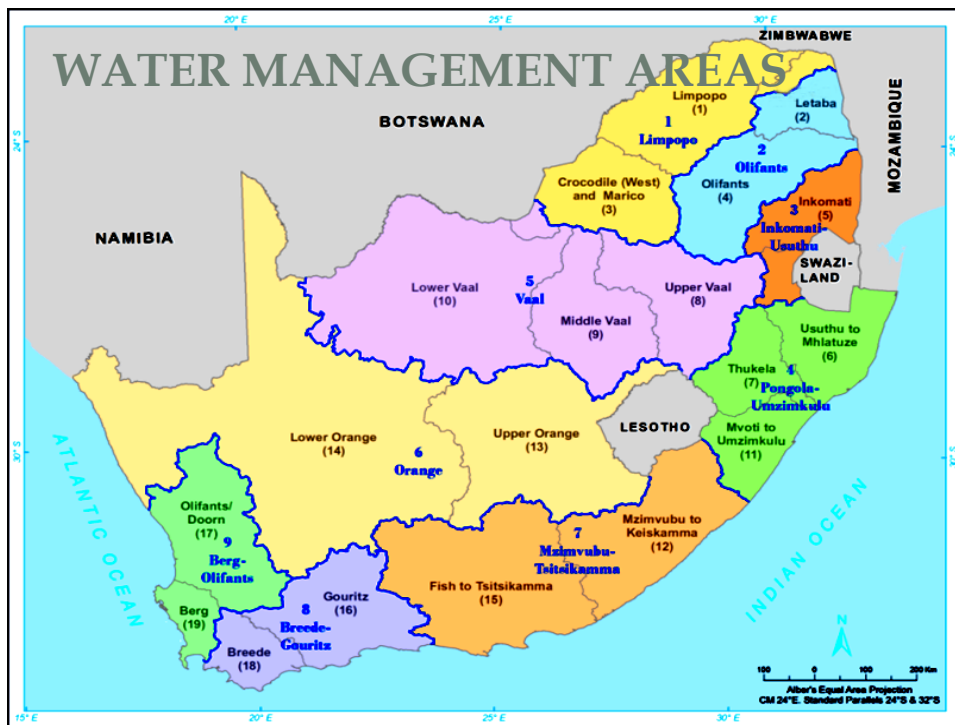
## 4. DWA ACTION

- Formal water management approach
- Establishment of 9 Water management Areas
- Establishment of 9 Catchment management Authorities
- Need for Catchment Forums acknowledged
- Complex structure and levels

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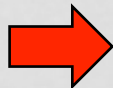
## 5. SECTOR INVOLVEMENT: IS IT MY BUSINESS?

- Sector includes users, impactors, public, Municipalities, civil societies, impactees, facilitators and sponsors
- Why is it my business?
  - User of water: need water efficiency
  - Impactor: run-off, water quality, volume, land-use management
  - Impactee: volume, flow, pollution, floods, health, aesthetics, economic
  - Manager: land-use, water quality, use efficiency and planning
  - Resource manager and developer: implications
  - Water accountability
  - Conflict management
  - Enabler
  - Participatory management
  - Water culture and ownership



## 6. SOME KEY SUCCESS FACTORS

- Appropriate water management and governance model
- Business management approach and application: business units
- Business viability
- Sector involvement, ownership and accountability; PARTNERSHIPS
- Executive water forums
- Smart tools: monitoring system, information and management system
- Smart solutions
- Sponsors
- Mandate
- Experts and champions
- Leadership, will and drive
- PERFORMANCE



***It can be done!***

THANK YOU

