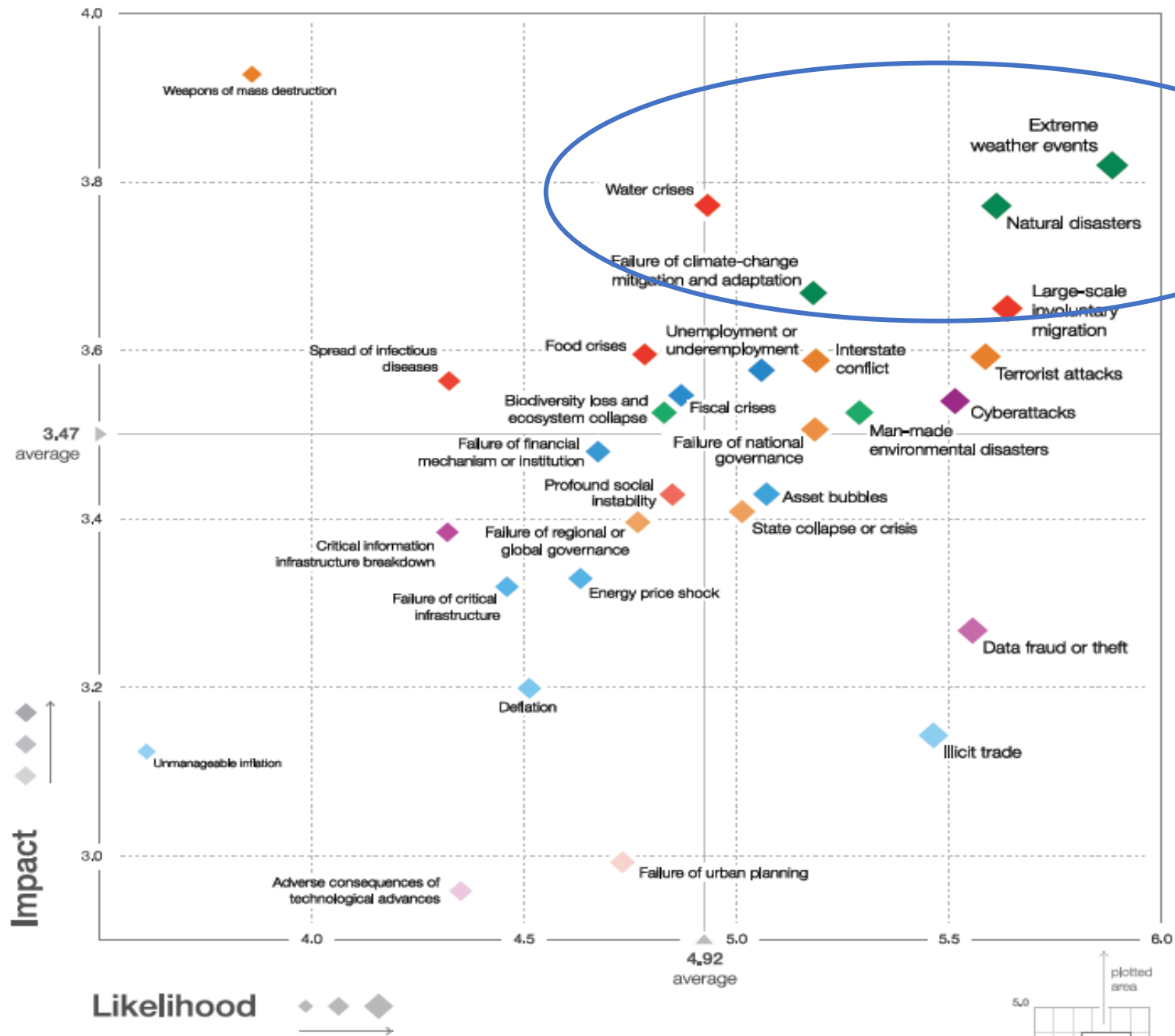


# Supporting an Emerging Water Industry in South Africa: Insights, Opportunities and Challenges

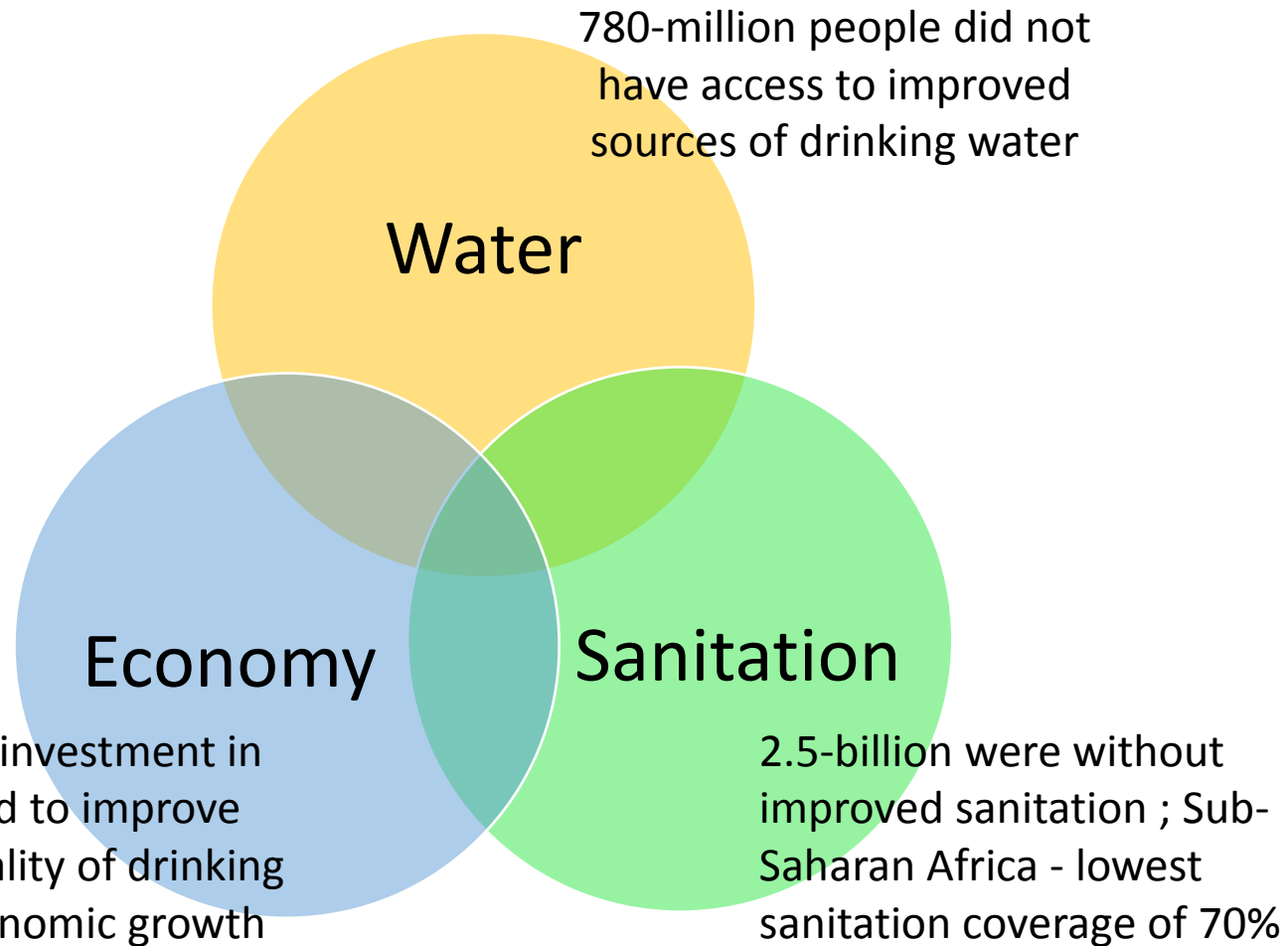
Dr Valerie Naidoo

Water Research Commission

TIPS Annual Forum 2017



# Global Trends



*“there will be no SADC industrial revolution without substantially higher investment in infrastructure, upgrading and diversifying the capital stock and the provision of the high technology skills necessary in the modern industry”*

**1** NO POVERTY



**2** NO HUNGER



**3** GOOD HEALTH



**4** QUALITY EDUCATION




**5** GENDER EQUALITY




**6** CLEAN WATER AND SANITATION




**7** RENEWABLE ENERGY



**8** GOOD JOBS AND ECONOMIC GROWTH



**9** INNOVATION AND INFRASTRUCTURE



**10** REDUCED INEQUALITIES



**11** SUSTAINABLE CITIES AND COMMUNITIES



**12** RESPONSIBLE CONSUMPTION



**13** CLIMATE ACTION



**14** LIFE BELOW WATER



**15** LIFE ON LAND



**16** PEACE AND JUSTICE



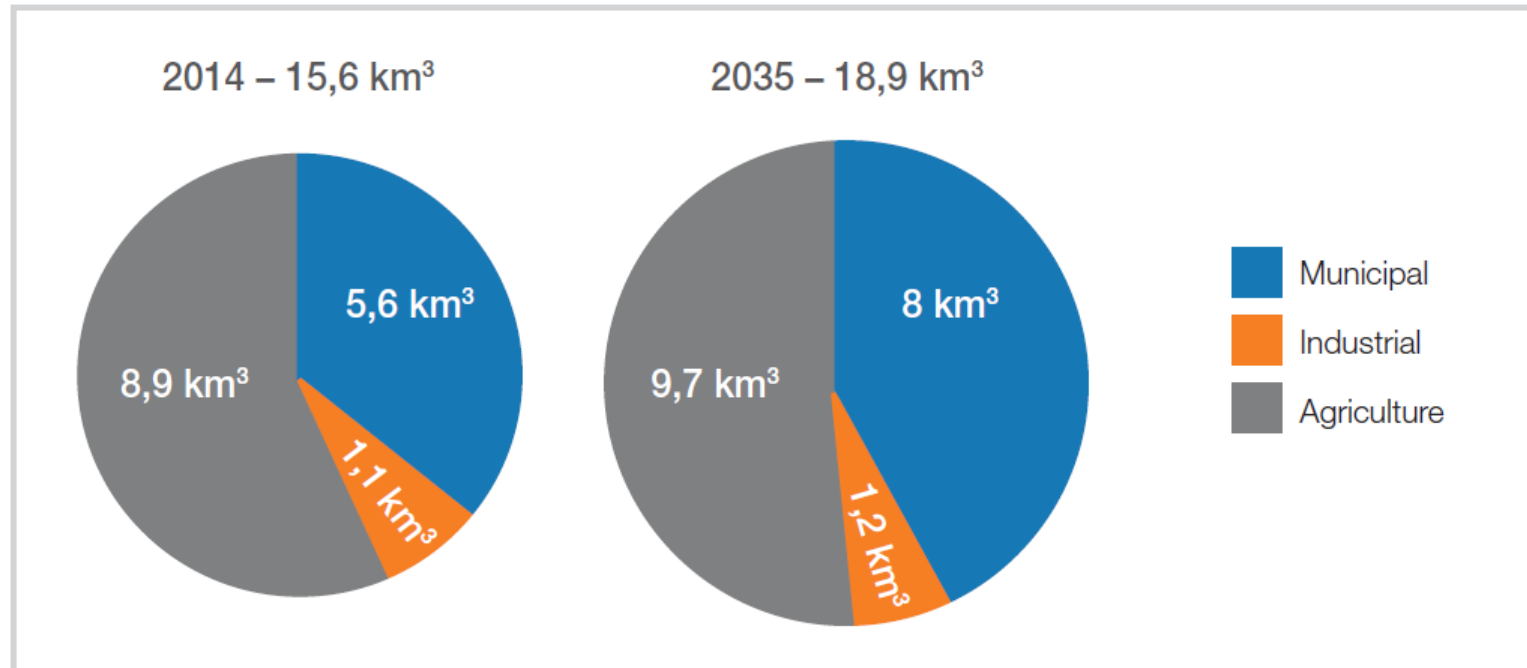
**17** PARTNERSHIPS FOR THE GOALS



**THE GLOBAL GOALS**  
For Sustainable Development

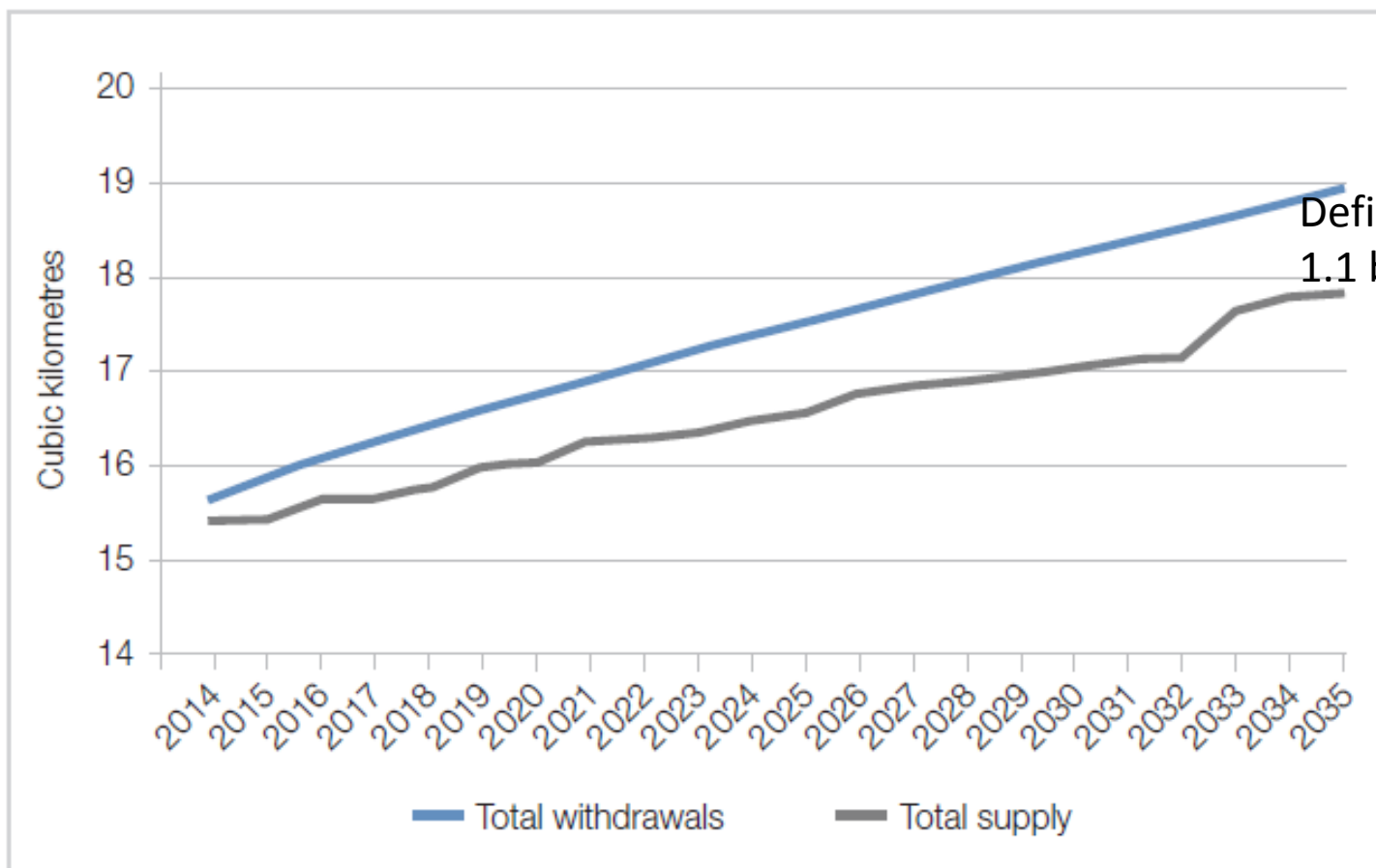
# Projection of demand to 2035

Figure 3: Total water withdrawals in 2014 and 2035 in the Current Path scenario



Source: IFs version 7.13. Area of pie charts scaled to overall water withdrawals.

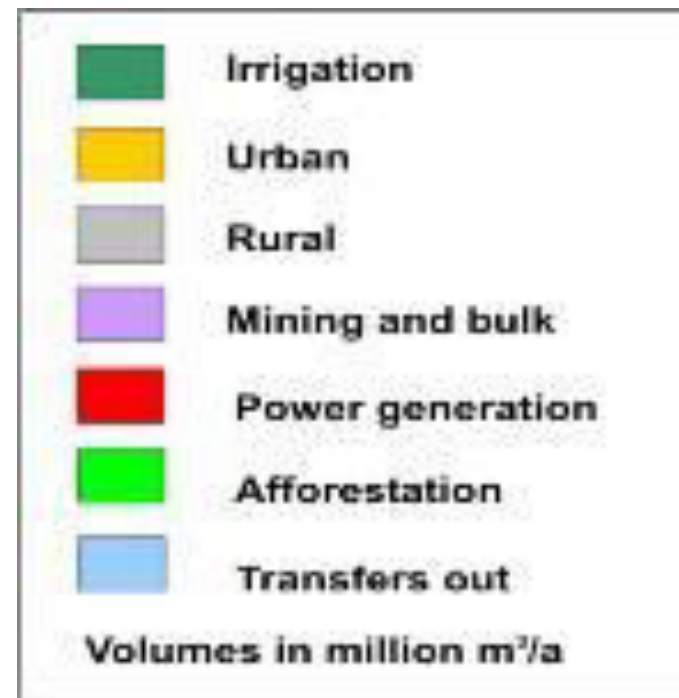
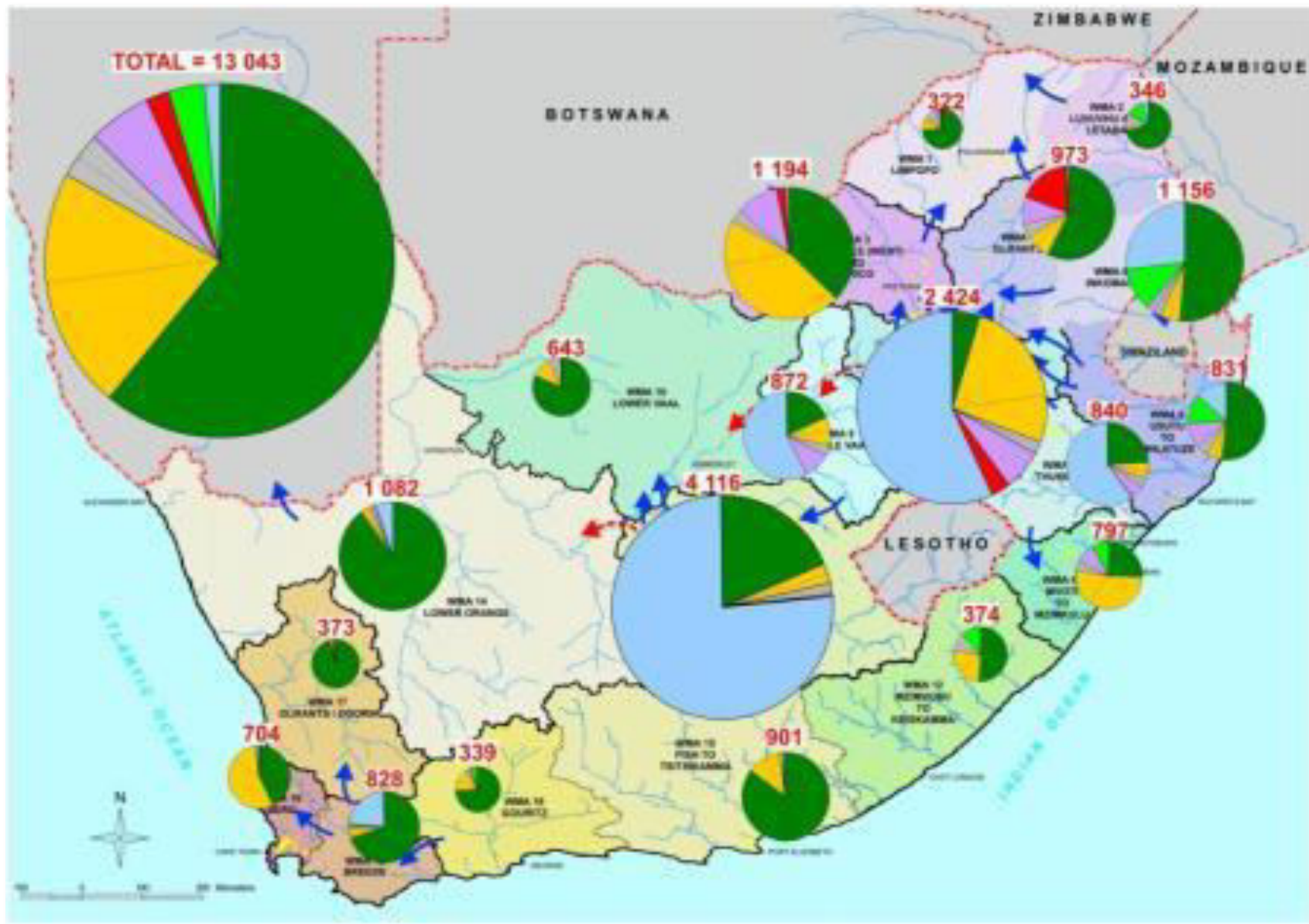
Figure 5: Total water withdrawals for all sectors forecasted to 2035 and total water supply, including yield increases from all large-scale water reconciliation strategies



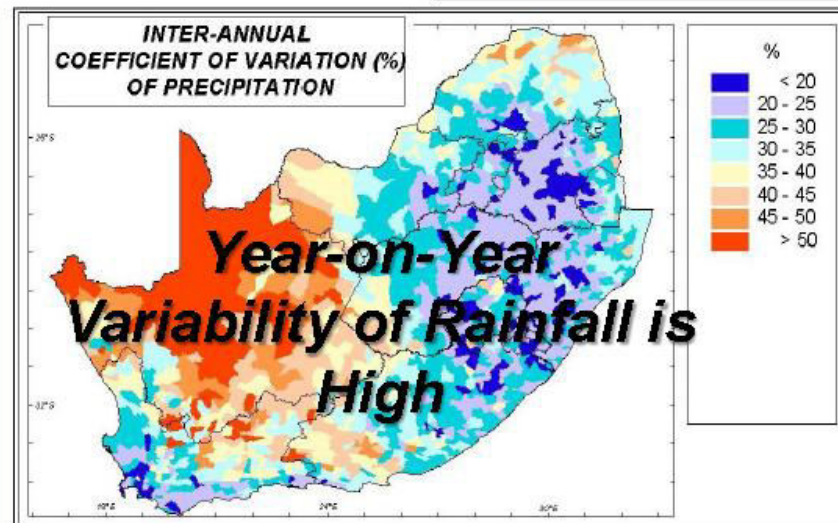
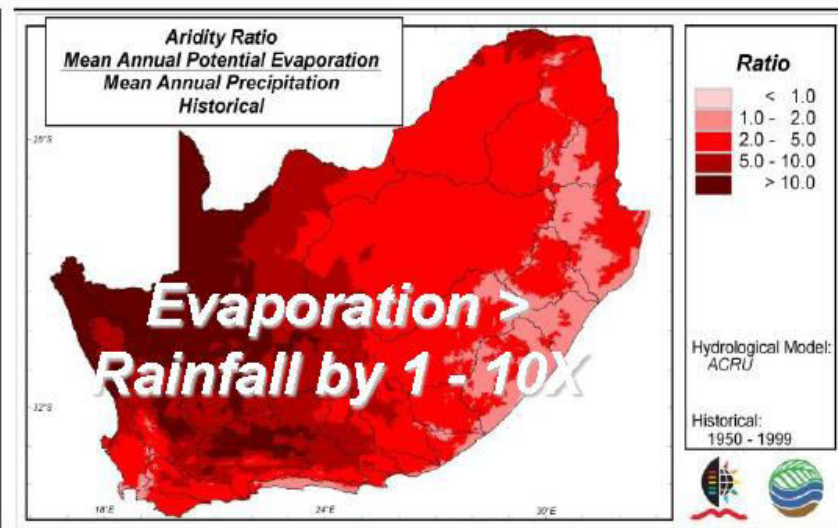
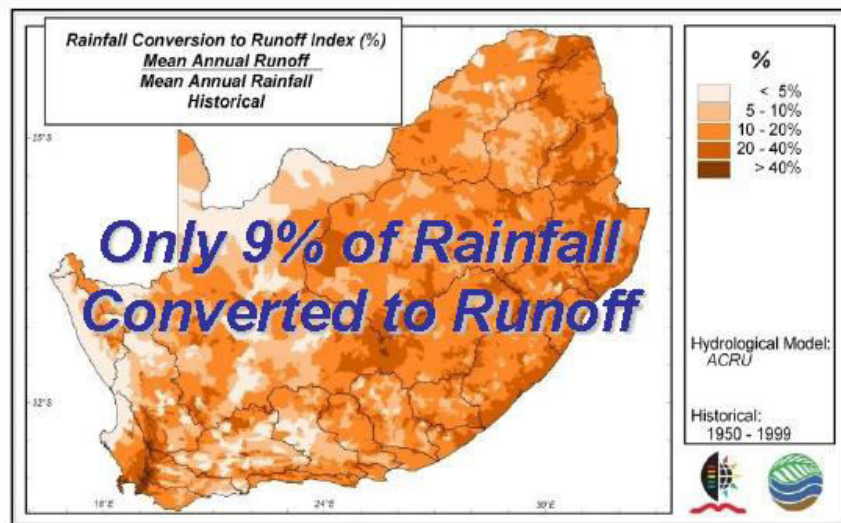
Deficit of  
1.1 bn m<sup>3</sup>

The net deficit between supply and demand could grow to between 2.7—3.8 billion m<sup>3</sup>  
(Water RDI Roadmap, 2015)

Source: IFs version 7.13.

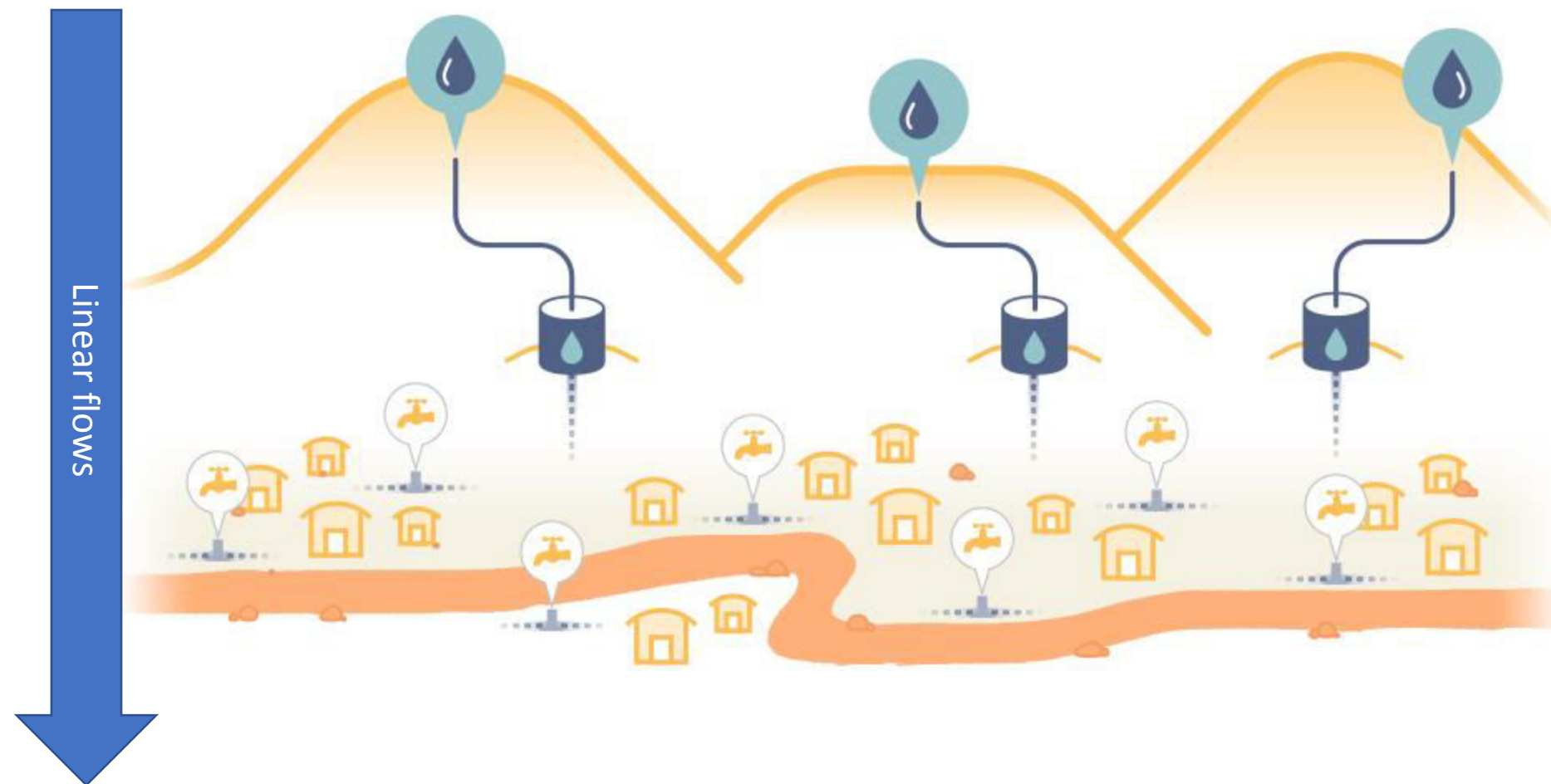


# 1. SA is Already Exposed to a High Risk Climate





Store, treat & use



Dispose

**DISRUPT THE WAY WE THINK & FINANCE SUPPLY**

# The One Water Cycle



ALL WATER IS ONE WATER

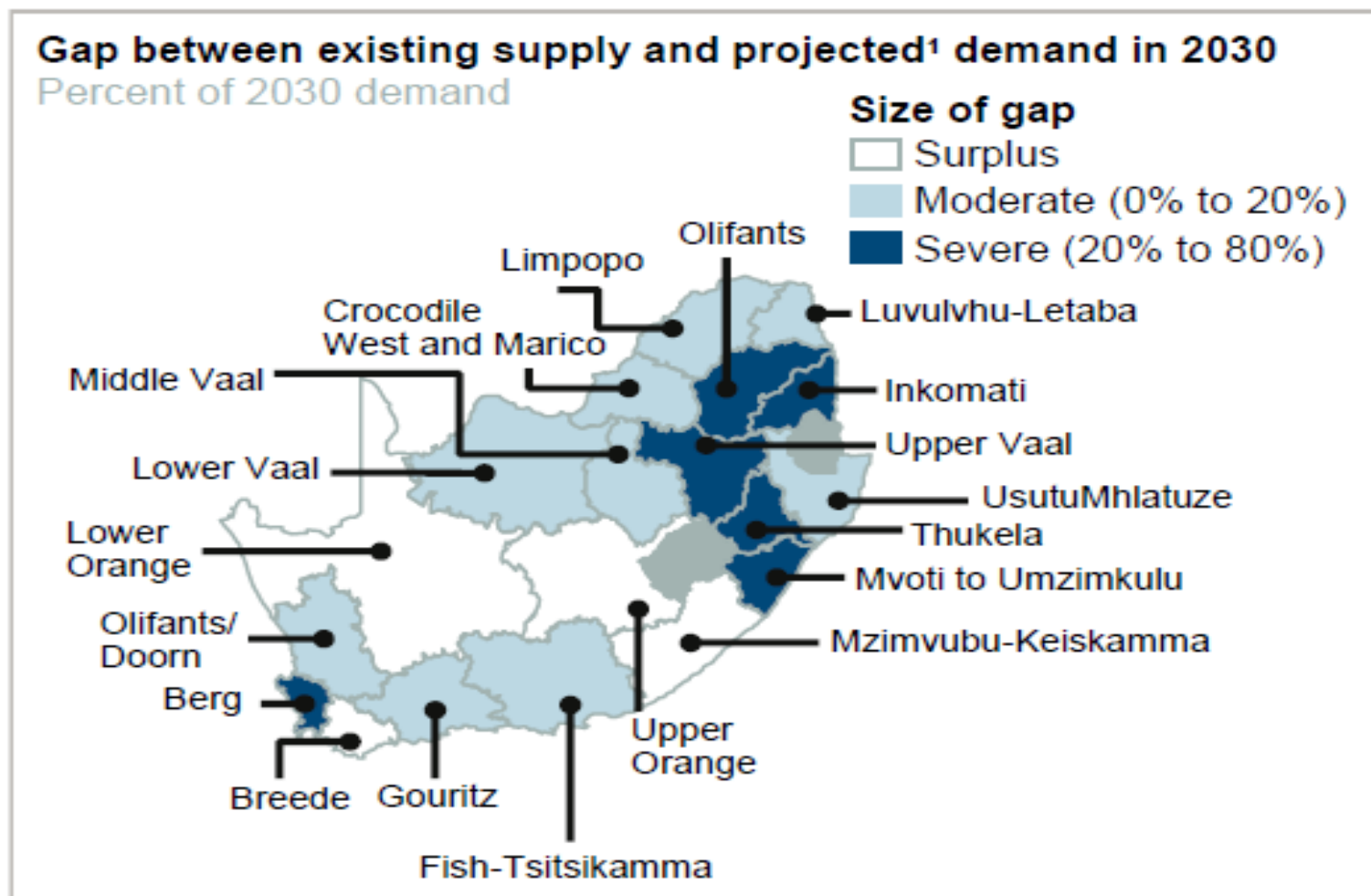


Reuse

New sanitation

Greywater

## South Africa – Water supply and demand gap



<sup>1</sup> Frozen irrigation levels and limited ability to increase rainfed land will drive an increase in virtual water trade both between WMAs and internationally with trading partners

SOURCE: Water Research Commission; Department of Water Affairs and Forestry (DWAF); Statistics South Africa; 2030 Water Resource Group

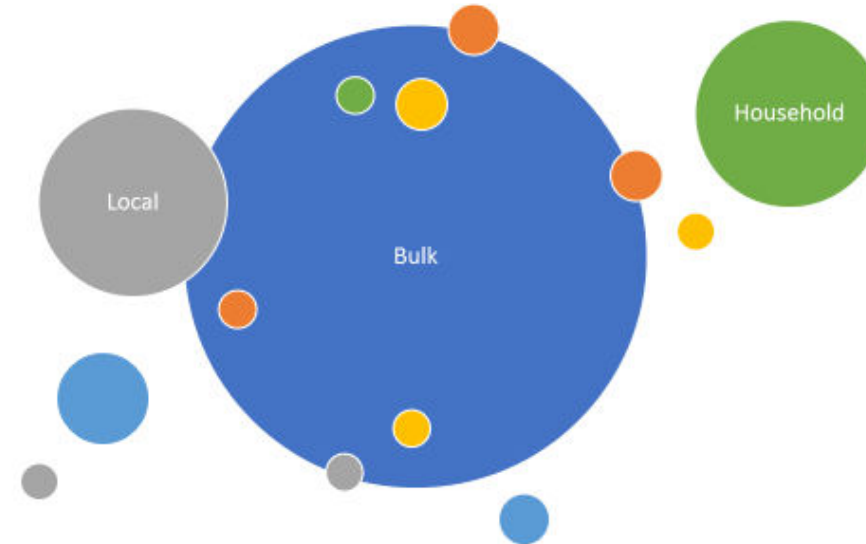
# Water Mix Opportunities for SA

- **Surface water (86%)**
- Groundwater
- Wastewater
- Minewater
- Greywater
- Rainwater
- Stormwater
- Seawater
- Air (humidity >20%)
- Fog harvesting
- Cloud seeding



Scale

**Public vs Private**

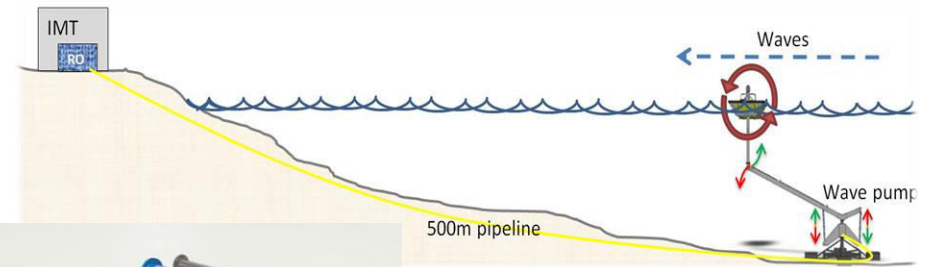
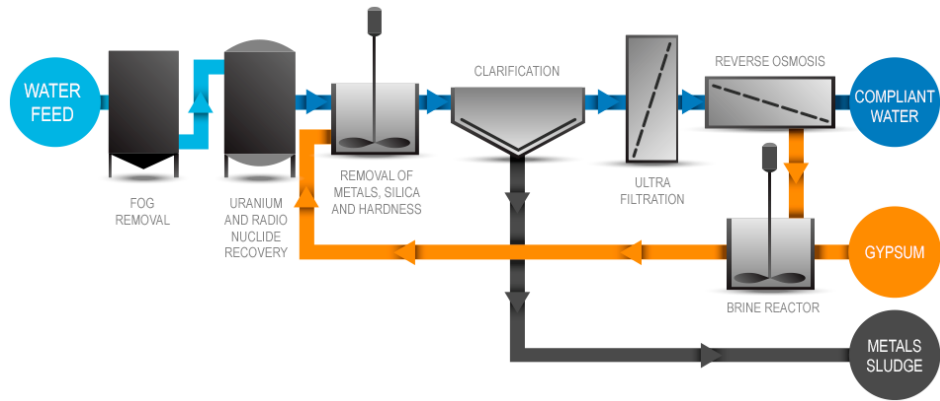
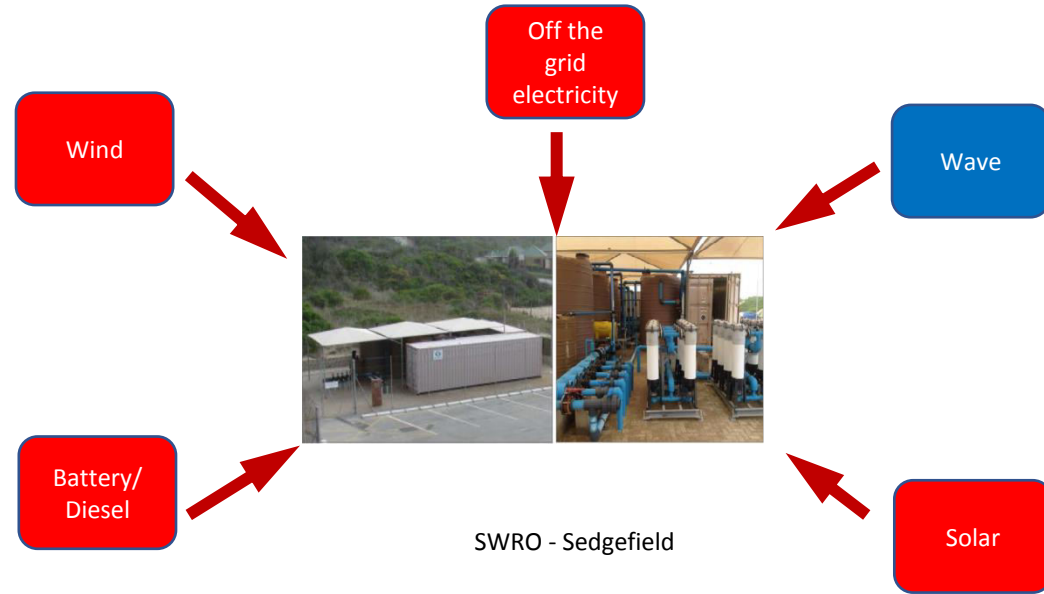


**Infrastructure & treatment technologies & M&E technologies**

**ENERGY**

# Industrial Policy Action Plan

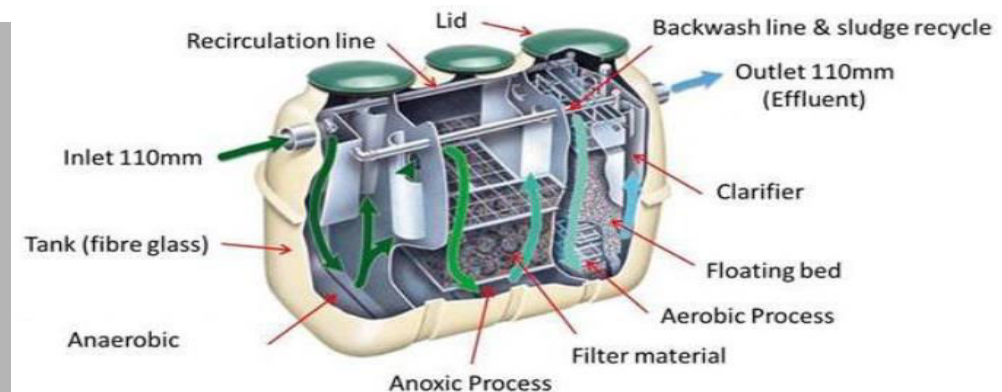
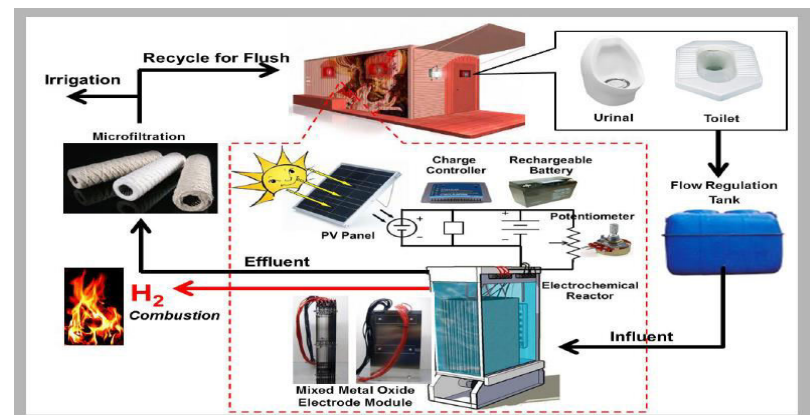
- Water & Sanitation
  - Water Industrialisation Implementation Plan
  - Desalination and Manufacturing
  - Next generation sanitation cluster development
  - Advanced Wastewater Technologies in manufacturing



# Is Sanitation all about waterborne systems: Re-imagining the Sanitation Space

- Drying
- Dehydrating
- Dessicating
- Catalytic
- Chemical
- Pyrolysis
- Carbonisation
- Combustion
- Solar treatment
- Thermal

Developing a new sanitation manufacturing regional competence and SMME service development programme is feasible, particularly in view of the existence of a 40% unserved market with 79% of those served, currently paying for maintenance.



# Global Opportunity

The size of the global water and wastewater treatment equipment market is expected to reach approximately US\$ 103,41 billion by 2025. This is according to a new report conducted by Grand View Research.

At the same time South African Treasury has allocated 10.5 billion in 2016 to complete 2304 wastewater services projects over this MTEF period (Creamer, 2016).

If linked to a clear industrialisation strategy and plan, it has the potential to have a number of multiplier effects.



# Technologies alone will not lead the water industrialisation programme...

- Business case must be relevant
- Innovative social models
- Innovative investment models
- Innovative delivery models
- Innovative but appropriate solutions eg off-grid
- Constructive IP management
- Modular reuse systems
- Assembly/manufacture/Export



Offer improved service and solutions  
Improved quality of life  
Improved opportunities for economic growth