


water & sanitation  
Department  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA



# National Water & Sanitation Master Plan “A Call to Action”

## Eastern Cape Provincial Workshop

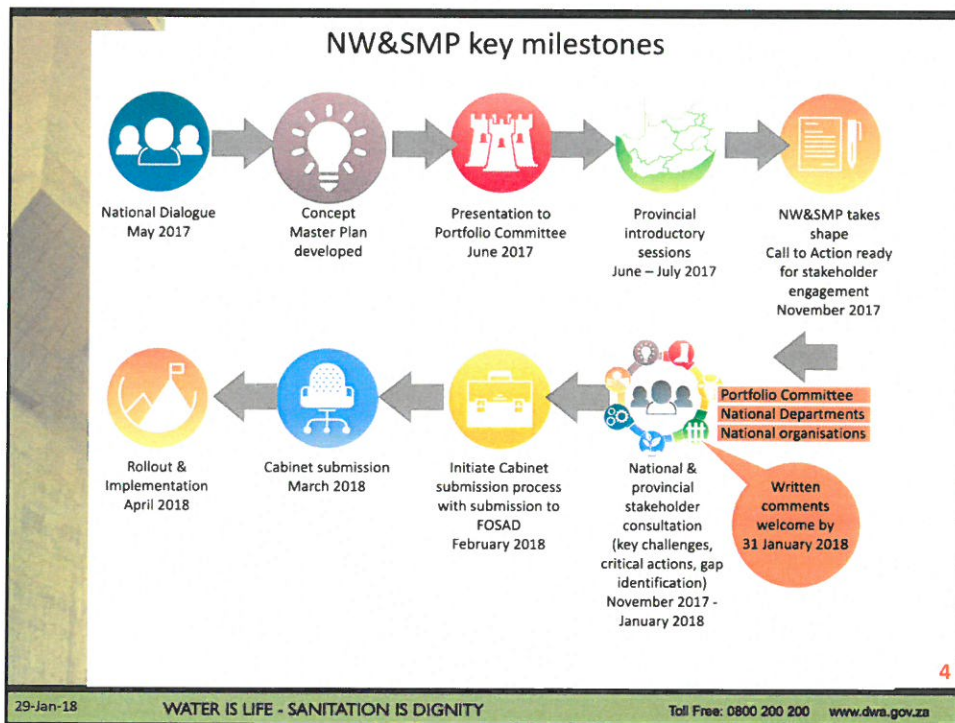
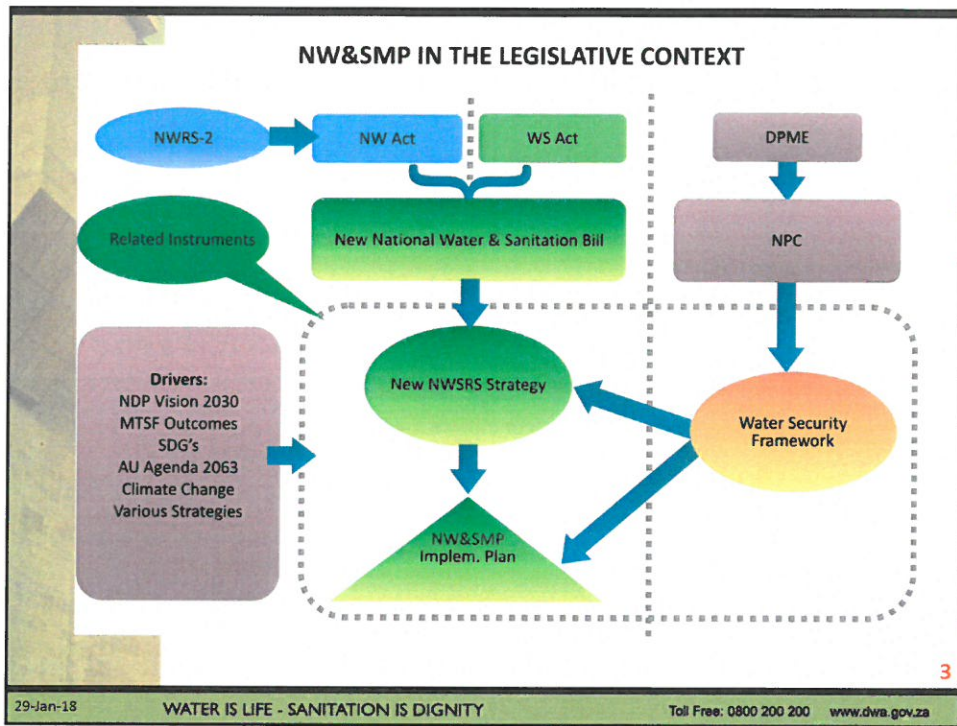
Presented by: DWS  
24 January 2018

29-Jan-18 WATER IS LIFE. SANITATION IS DIGNITY 1

### This presentation seeks to

- Provide a brief re-cap on NW&SMP development
- Present the matters raised in the **Call to Action** (as the ‘face’ of the NW&SMP) in order to strengthen common understanding and facilitate sector partner input (particularly identification of gaps, corrections, omissions)
- Provide sector partners with the opportunity to articulate support for the initiative (only by working together can South Africa be ‘*Ready for the Future & Ahead of the Curve*’) and indicate alignment with own programmes
- Recognise the issues raised by provincial stakeholders at 2017 MP engagement
- Indicate NW&SMP critical path to Cabinet submission (by mid-March 2018)
- Confirm Regional stakeholder actions and commitments towards finalisation and implementation of NW&SMP

29-Jan-18 WATER IS LIFE - SANITATION IS DIGNITY Toll Free: 0800 200 200 www.dwa.gov.za 2



## Recap: National Water Dialogue

- The development of the NW&SMP was launched at the National Dialogue, which took place on 22 May 2017, and which was hosted by Deputy Minister Pam Tshwete:

*“This Master Plan is about **re-engineering the manner in which the water and sanitation business in South Africa is coordinated and guided**. Working with all water sector partners we want to see a high level actionable plan, role-players, milestones and resources required towards achieving the 2030 SDGs. The genesis of this Master Plan would be a **strong partnership** with all stakeholders. It is about mobilising the entire water family to take the **lead in their own spaces...**”*

5

## Key outcomes of National Dialogue

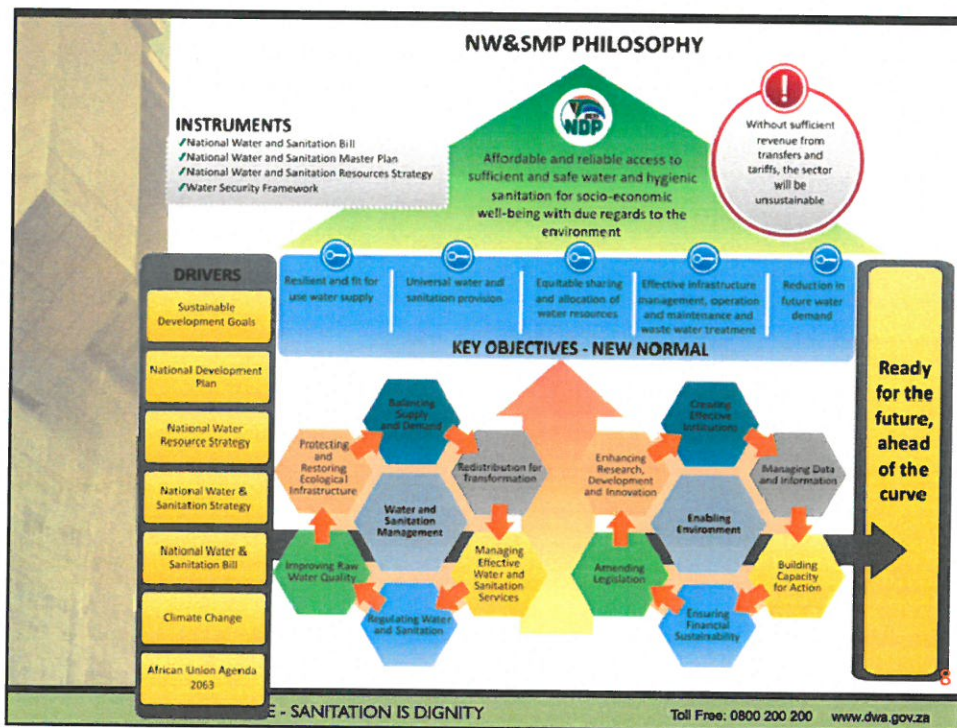
- **Participants noted the need for the master plan and accepted the challenge to assist in its development**
- Requested a clear definition or description of the Master Plan
- Noted that a water and sanitation master plan would be a plan around which citizens can be proactive
- Need to utilize existing information whilst filling the gaps
- Need for communication and dissemination of information
- Uptake of technology & innovation to be promoted
- Need to focus on developing financial models with cost recovery
- Noted constraints on water availability and competing demands
- Noted that capacity of existing infrastructure is often insufficient
- Noted national challenge of high levels of non revenue water and poor revenue collection
- Noted challenge of insufficient funds for maintenance and refurbishment
- Skills/capacity constraints to deliver on the master plan

## What does the Master Plan provide?

- Purpose of the National Water and Sanitation Master Plan (NW&SMP) is to provide an **overall perspective** of the situation in the water and sanitation sector and a consolidated plan of actions, to improve the current situation to meet the desired future state of the sector, defined by Government's vision, goals and targets until 2030 (NDP, SDG's and other key drivers)
- The NW&SMP sets out an **'uncluttered', easy to follow framework** for managing water resources and the provision of water and sanitation services in the short, medium and long-term **that the country can get behind as we work together to be Ready for the Future and Ahead of the Curve**
- **Currently under preparation**, the NW&SMP will include a **schedule of interventions, actions and investments**, required to enable the achievement of these targets, specify the roles and responsibilities, the specific actions, the intermediate and final targets and deadlines and how performance will be monitored.
- Delivery of Final Draft Master Plan: March 2018 **for submission into Cabinet processes**

7

29-Jan-18 WATER IS LIFE - SANITATION IS DIGNITY Toll Free: 0800 200 200 www.dwa.gov.za



### National Water and Sanitation Master Plan

NW&SMP – a plan in 3 volumes

Download your copy & submit written comments (by 31 January 2018) at [www.dws.gov.za](http://www.dws.gov.za)

9

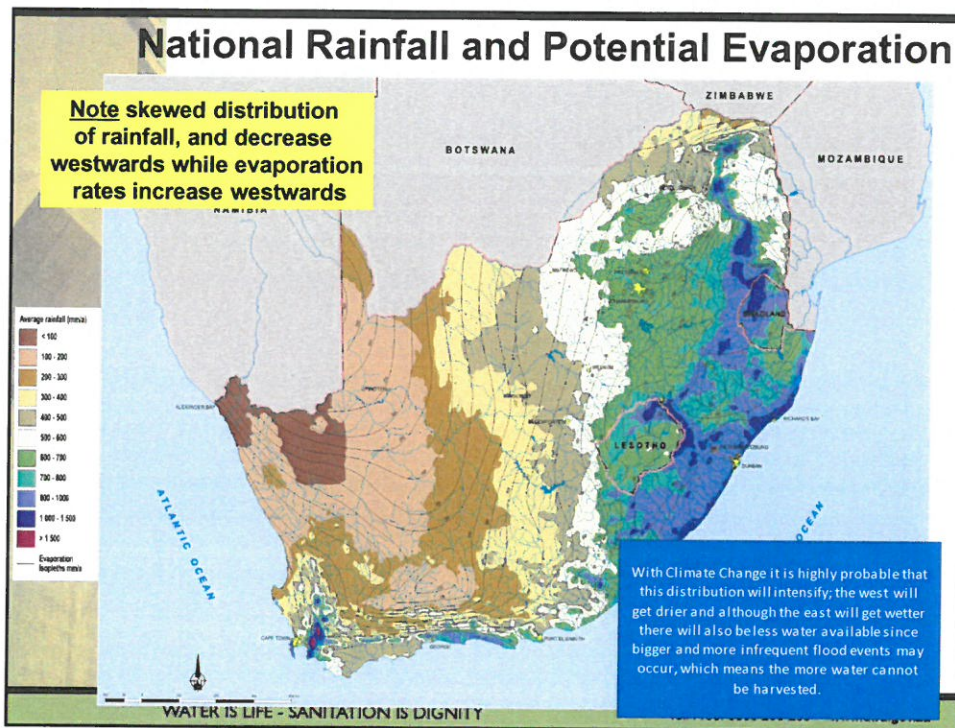
29-Jan-18      WATER IS LIFE - SANITATION IS DIGNITY      Toll Free: 0800 200 200      [www.dws.gov.za](http://www.dws.gov.za)

### Why a **Call to Action**, need for a **new normal**?

- **Water security** is one of the biggest issues/challenges facing South Africa and the world in this 21st century. It presents a profound challenge to our social wellbeing and our economic growth.
- World Economic Forum’s (WEF) Global Risks Report 2017 reports that **environmental concerns** are more prominent than ever.
  - “Extreme Weather Events” and “Major Natural Disasters” rank amongst the top five risks with the greatest potential likelihood and impact
  - “Water Crisis” ranks in the top five risks with the greatest potential impact (ranked amongst the top five since 2012)
- South Africa’s water scarcity could get rapidly worse as our supply contracts and demand escalates due to growth, urbanization, unsustainable use, degradation of wetlands, water losses and a decrease in rainfall due to **climate change**.

10

29-Jan-18      WATER IS LIFE - SANITATION IS DIGNITY      Toll Free: 0800 200 200      [www.dwa.gov.za](http://www.dwa.gov.za)

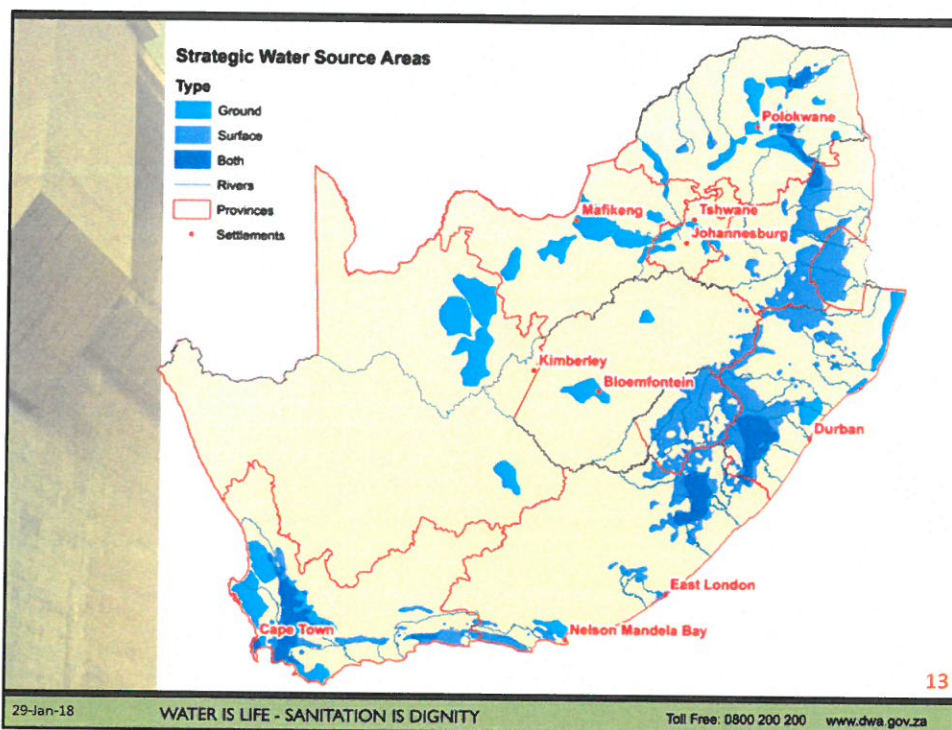


### Some more context....

- The challenges around water management in South Africa are already significant and water scarcity is the biggest risk to our growth and development.
- Urgent measures are required through appropriate regulation and enforcement to:
  - **protect the river systems** and the **high water yield areas should be protected** as the rivers transfer the “life blood” of the Nation and about 50% of our water resources originate from 8% of our land (high yield water areas).
  - These **high water yield areas** can be regarded as natural “water factories”, supporting growth and development needs.
- Deterioration of water quality and quantity in these areas is **having** a disproportionately large negative effect on the functioning of downstream ecosystems and the overall sustainability of growth and development in the regions they support.

12

29-Jan-18      WATER IS LIFE - SANITATION IS DIGNITY      Toll Free: 0800 200 200      www.dwa.gov.za



## ...and yet more context

**5.3 million households** (35%) do not have access to reliable drinking water.

**14.1 million people** do not have access to safe sanitation

A **R33 billion** funding gap each year for the next 10 years must be closed through improved revenue generation and reduced costs

Only **63 %** of households have access to a reliable water supply service

**56%** of waste water treatment works and **44%** of water treatment works are in a poor or critical condition. **11%** are dysfunctional

Only **5%** of agricultural water is used by black farmers

**41%** of municipal water does not generate revenue. **35%** is lost through leakage

**48%** of the remaining wetlands are critically endangered

South Africa is facing a projected **17%** water deficit by 2030 if it doesn't adopt a new normal

29-Jan-18 WATER IS LIFE - SANITATION IS DIGNITY Toll Free: 0800 200 200 www.dwa.gov.za

## The 'new normal'

**Achieving water security in South Africa requires a *new normal*: a significant paradigm shift that**

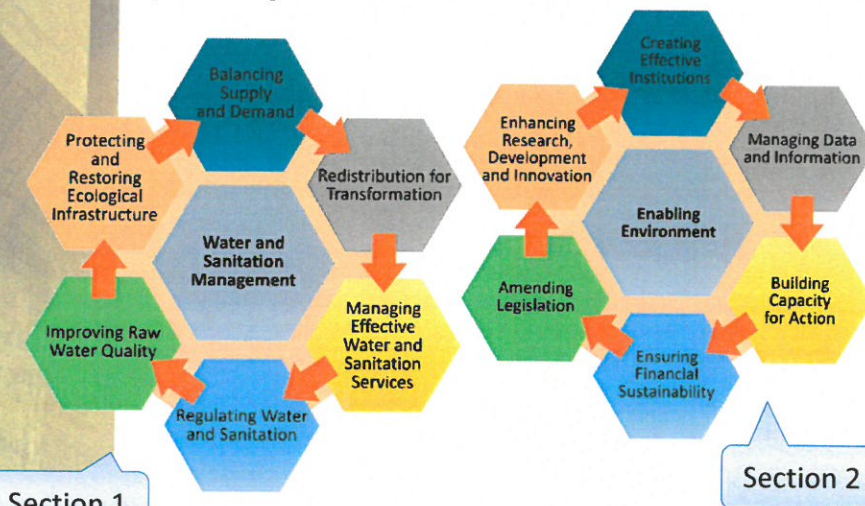
- ✓ recognises the limitations of water availability and the need for financial sustainability
- ✓ addresses the real value of water
- ✓ ensures equitable access to limited water resources
- ✓ delivers reliable water and sanitation services to all
- ✓ focuses on demand management and alternative sources of water
- ✓ considers the impacts of climate change and
- ✓ addresses declining raw water quality

The new reality:

- Water will become more expensive
- Everyone **MUST** use less water for the same activities
- Everyone - except the indigent - must pay for services

15

- Underscoring the need for urgency and focus, the Call to Action, as the 'front-end' of the NW&SMP has clustered the key challenges & solutions as follows



16

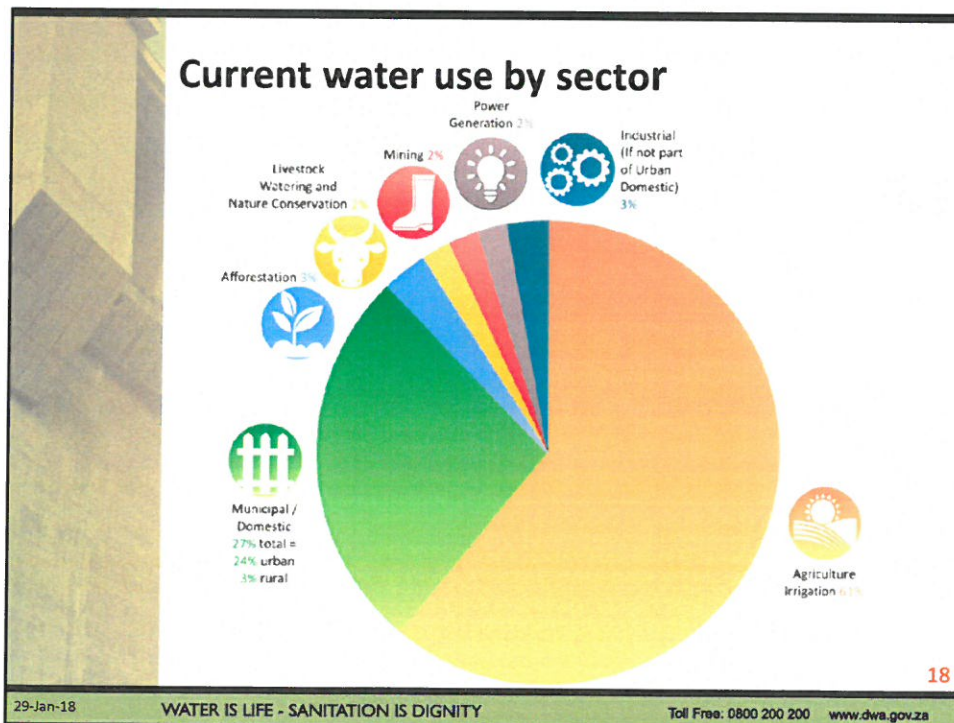


### KEY CHALLENGE Balancing supply and demand

- Our **water availability** could deteriorate rapidly as our supply contracts and demand escalates due to growth, urbanization, inefficient use, degradation of wetlands, water losses and the negative impacts of **climate change**
- Based on projections, by 2030, the **water deficit** could be between **2 700 and 3 800 million m<sup>3</sup>/a**, a gap of about 17% of available surface and ground water. This will require a **“Business Unusual”** approach to close the gap
- Serious interventions should be made to **reduce demand** by improving efficiency, adopting new technologies and reducing losses (especially in the Agriculture and Municipal sectors)

17

29-Jan-18 WATER IS LIFE - SANITATION IS DIGNITY Toll Free: 0800 200 200 www.dwa.gov.za

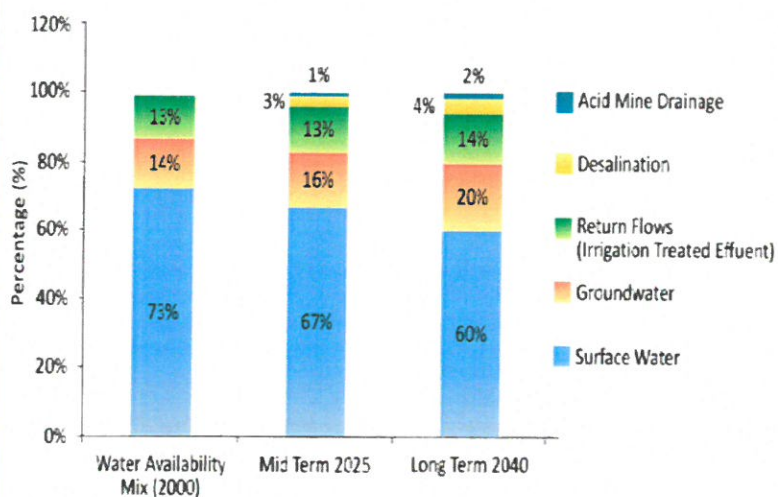


### Balancing supply and demand (con't)

- Agricultural consumption is largely unmetered, and there are concerns about unauthorised abstraction and water wastage in the sector. In addition, agricultural users pay a much lower tariff than other users of untreated water and the relatively cheap water has not incentivised the adoption of water efficient irrigation practices.
- Average municipal water use in South Africa is around 237 litres per person per day compared to the world average of 173 litres per person per day. Since large numbers of South Africans use very small amounts of water per day, this average masks the high water use by privileged sectors of the population. The high water use is partly due to municipal non-revenue water which is currently at an unacceptably high 41%.
- Municipalities are losing about 1660 million m<sup>3</sup> per year through Non-Revenue Water. At a unit cost of R6/m<sup>3</sup> this amounts to R9.9 billion each year
- There is significant opportunity to reduce water demand in the municipal and irrigation sectors.

19

### Being ready for the future means making a diversified water mix a reality in South Africa



20

### Balancing supply and demand (con't)

- Water demand must be reduced by improving efficiency, adopting new technologies, and reducing losses through water awareness, and strict regulation and incentives.
- Average domestic consumption must be reduced to 175 litres per person per day by 2025.
- On the supply side, there is a need to move from the current water mix which is strongly dominated by surface water, with some groundwater and return flows to a water mix that includes increased groundwater use, re-use of effluent from waste water treatment plants, water reclamation, as well as desalination and treated acid mine drainage (AMD).
- By 2040, treated acid mine drainage and desalinated seawater will make a significant contribution to South Africa's water mix, ground water usage will increase, and the over-reliance on surface water will reduce.
- South Africa has four internationally-shared river basins that contribute 45% of the country's total river flow. These resources must be shared equitably with neighbouring states

21

### Internationally shared basins: Pressure from neighbours could reduce availability for RSA

- 4 rivers shared with 6 neighbouring countries
- basins cover 60 % of SA land area
- Contribute 45% of country's total river flow
- support ± 70% of gross domestic product
- Un Convention on Non-Navigable Rivers
- SADC Protocol on Shared Water Courses



22

## KEY CHALLENGE Redistribution for Transformation

Transformation is critical in three areas:

- ✓ ensuring that the use of water for productive purposes is equitable
  - ✓ making sure that the governance of water is representative
  - ✓ and ensuring access to decent water and sanitation services for all
- Equitable access to water and sanitation services between water uses (focus on agricultural sector deal with “sunset clauses”). More than 70% of commercial farms in South Africa are owned by white farmers, who also use 95% of the water allocated to the agricultural sector
  - The Irrigation Strategy developed by DAFF has identified water schemes where there is the potential for irrigation expansion. This expansion can contribute to access to water for black farmers.



In order to effect transformation, DWS will leverage water available in government water schemes to allocate to emerging black farmers

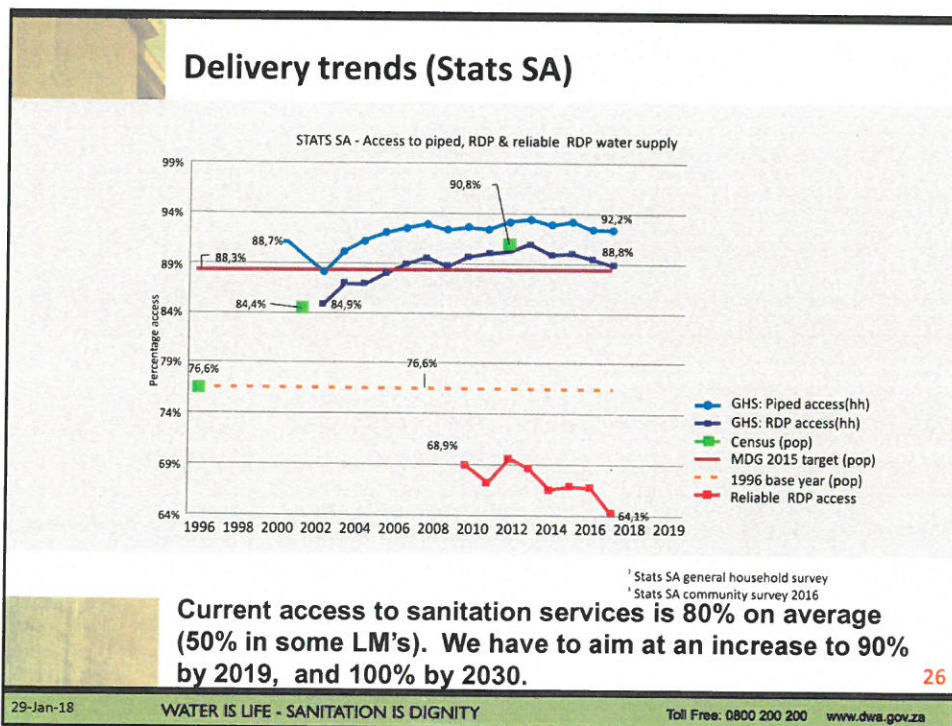
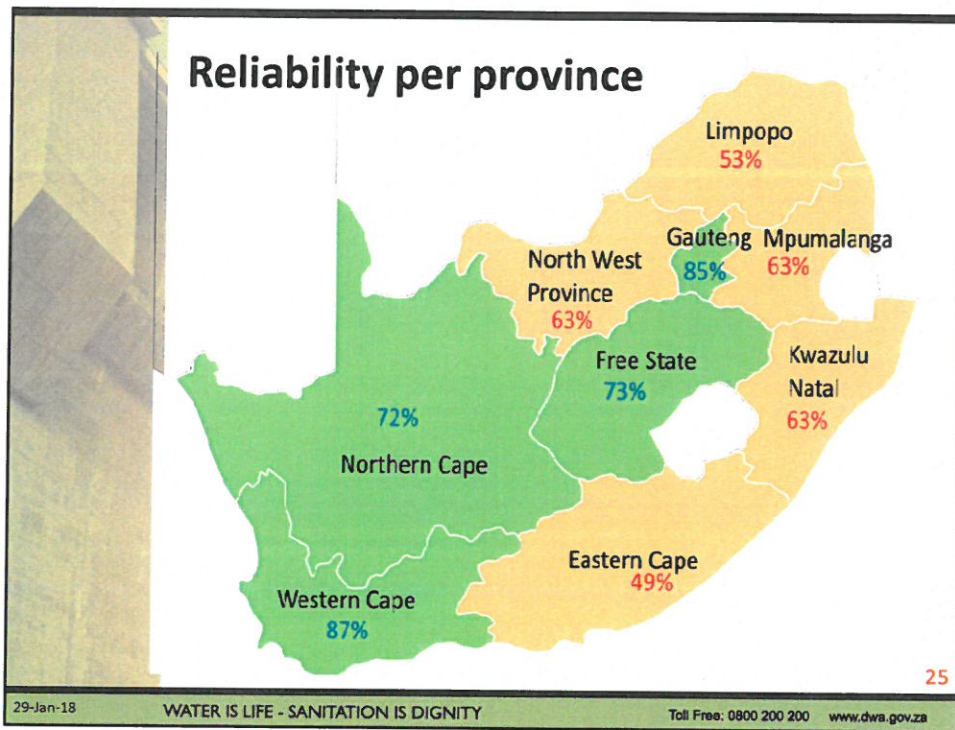
23

## KEY CHALLENGE Managing effective water and sanitation services

- StatsSA General Household Survey (GHS): 89% households have access to operational services, while Reliability is only at 63%
- Some 11% of water supply schemes are fully dysfunctional. Approximately 56% of the over 1 150 WWTW and approximately 44% of the 962 WTWs are in poor or critical condition and in need of urgent rehabilitation.
- The capacity of WSA to operate, maintain and manage assets for existing infrastructure needs urgent attention
- The failure of municipalities to provide reliable water and sanitation services is largely due to the lack of capacity, the misappropriation of funding, and/or the lack of and funding to operate, maintain, refurbish and manage water and waste water infrastructure assets properly.



24



## KEY CHALLENGE Regulating water and sanitation

Water and Sanitation Management

Regulating Water and Sanitation

- There are in the region of 80 000 water use authorisations, either ELUs or WULAs, with around 60 000 unique users (8000 from state-owned infrastructure)
- Despite strong regulatory tools in the legislation, the quality of raw water continues to deteriorate across the country, and there are high levels of water theft and water wastage.
- The continued use of water under the Existing Lawful Use clause of the National Water Act is hampering the redistribution of water and effective regulation of this water use.
- Dam safety regulation is under threat from limited qualified people in the country
- Some municipalities fail to deliver the requisite level of water supply and sanitation, including failing to meet drinking water quality standards.

DWS will revitalize the Green, Blue & No Drop programmes

27

29-Jan-18

WATER IS LIFE - SANITATION IS DIGNITY

Toll Free: 0800 200 200 www.dwa.gov.za

## KEY CHALLENGE Improving raw water quality

### Water quality problems across South Africa

[Adapted from Ashton, 2009]

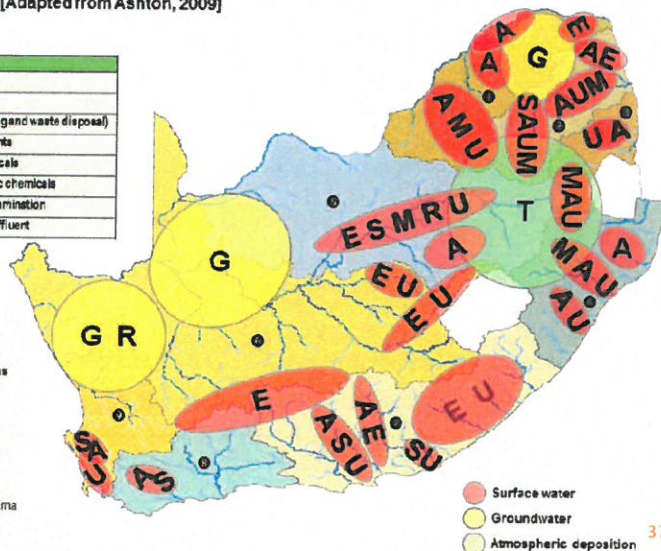
CODE	DESCRIPTION
S	Selinity
R	Radioactivity
M	Metals (from mining and waste disposal)
E	Excessive sediments
A	Agriculture chemicals
T	Acidic atmospheric chemicals
G	Groundwater contamination
U	Urban/Industrial effluent

#### Legend

Rivers

#### Water Management Areas

- Limpopo
- Oribis
- Inkomati-Usuthu
- Pongola-Mtamvuna
- Vaal
- Orange
- Mzimba-bu-Tsitsikamma
- Breede-Gouritz
- Berg-Cliffants



- Surface water
- Groundwater
- Atmospheric deposition

37

28


29-Jan-18

WATER IS LIFE - SANITATION IS DIGNITY

Toll Free: 0800 200 200 www.dwa.gov.za

### KEY CHALLENGE Improving raw water quality

- Poor raw water quality pushes up the costs of treatment to make it fit for domestic and industrial use.
- Poor water quality also impacts negatively on agricultural production. It is generally cheaper to treat water at the point of discharge, where the pollution is still relatively concentrated, than it is to treat water once the pollution has dispersed into a large water body and mixed with multiple other pollutant types.
- The cost of pollution should be borne by the polluter and not externalised to down-stream water users or the state.




29

29-Jan-18 WATER IS LIFE - SANITATION IS DIGNITY Toll Free: 0800 200 200 www.dwa.gov.za

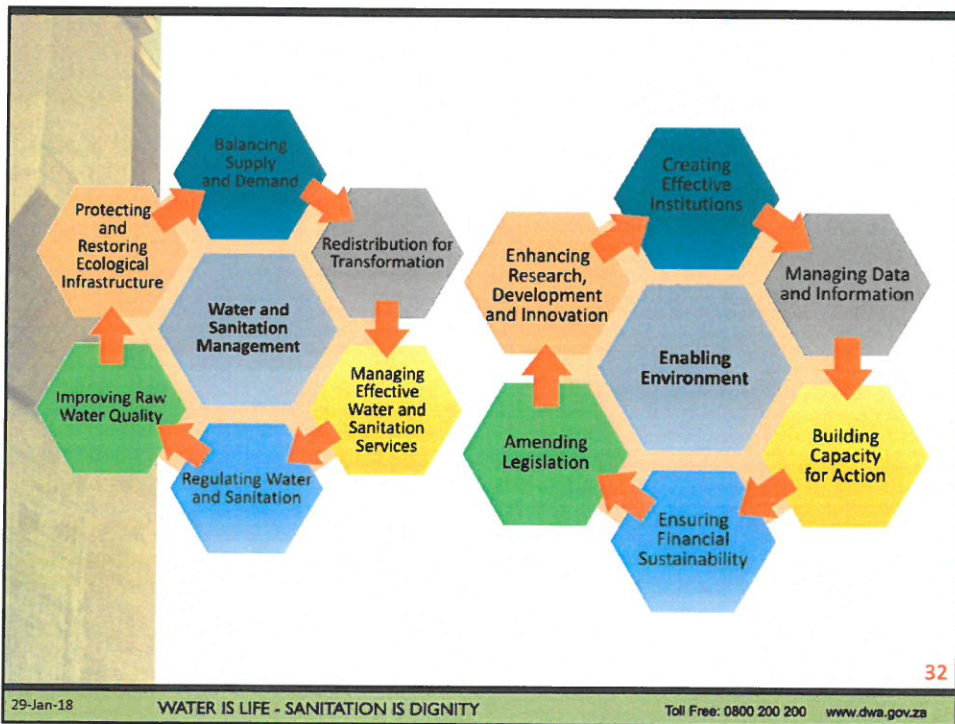
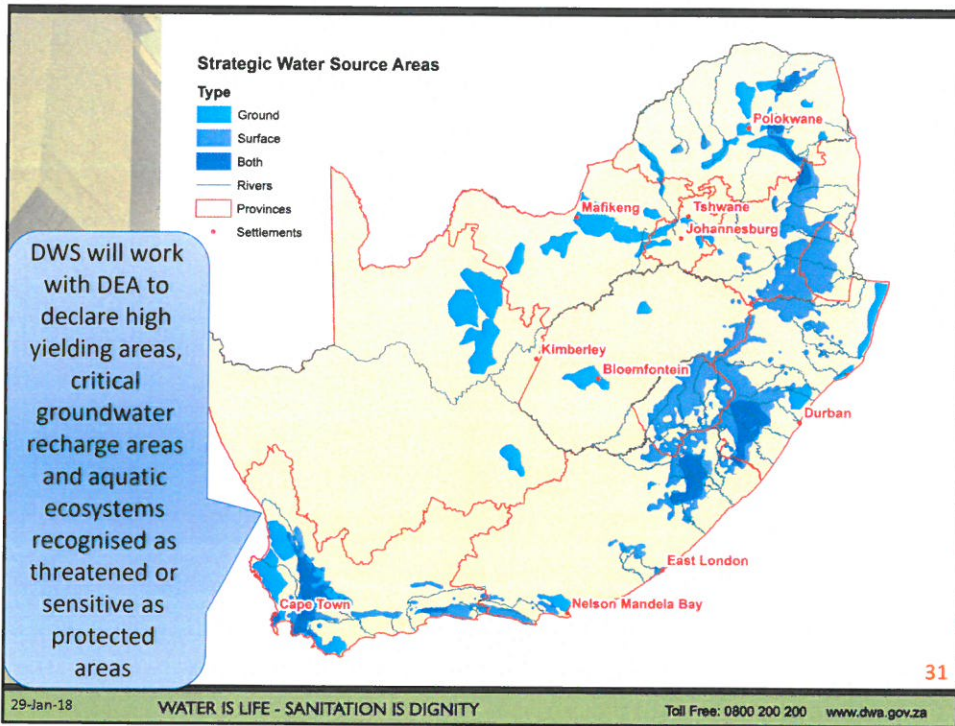
### KEY CHALLENGE Protecting & restoring ecological infrastructure

- Between 1999 and 2011 river health deteriorated across all of South Africa's nine water management areas. The extent of main rivers in South Africa with a poor ecological condition increased by 500% between 1999-2011 with many rivers pushed beyond the point of recovery. The extent of tributaries with a poor ecological condition increased by 229% in this same period.
- It is estimated that South Africa has lost over 50% of its wetlands, and of the remaining 3.2 million ha (less than 5% of SA's land cover) 48% are critically endangered and a third of these wetlands are already in a poor condition.
- As about 50% of South Africa's water resources originate from 8% of our land. SANBI and DWS have worked on a process of identifying key 'water factories', or high yielding surface and groundwater areas in the country, **which must be protected if water security is to be achieved.**



30

29-Jan-18 WATER IS LIFE - SANITATION IS DIGNITY Toll Free: 0800 200 200 www.dwa.gov.za





## KEY CHALLENGE Creating effective water sector institutions

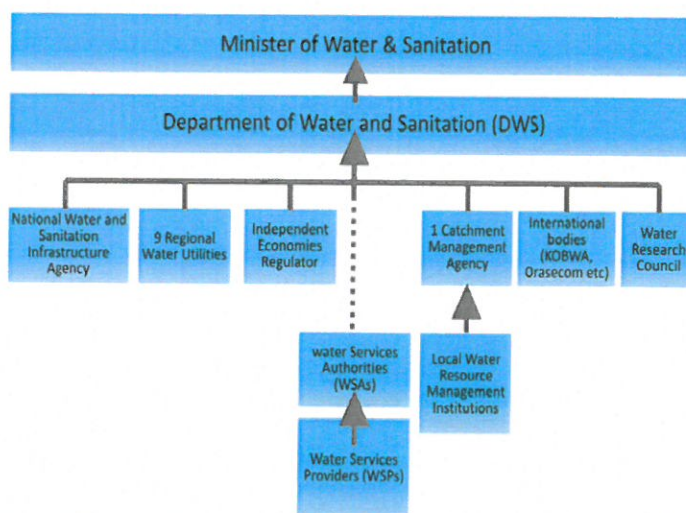
The institutional landscape of the water sector in South Africa is overly complex resulting in inefficiency. A lack of transformation in certain areas must also be addressed.

Priority actions:

- Establish one, financially sustainable CMA for the country, with one sub-structure for each of the nine water management areas, and transfer staff and budget and delegated functions, including licensing of water use.
- Establish the National Water and Sanitation Infrastructure Agency (NAWASIA)
- Establish Regional Water Utilities (RWUs)
- Establish independent economic regulator

33

## Institutional Arrangements to support the new normal



34

## KEY CHALLENGE Managing data and information

- The coverage of rainfall and runoff gauging in the country has been allowed to deteriorate and many rainfall measurements stations and gauging weirs are no longer functional

A lack of data and information resulting from a weak monitoring system poses high risks to decision making and planning and urgently needs to be addressed through the formalisation of an effective national hydrological monitoring centre

**Key Actions**

- Refurbish gauging stations
- Monitor and report annually on rainfall, streamflow, dam levels, key water quality parameters
- Establish a monitoring, evaluation, learning and reporting system for implementation of the NW&SMP
- Address the functionality of the Water Authorisation and Registration Management System to ensure records of water use are correct and are kept up to date.

35

29-Jan-18      WATER IS LIFE - SANITATION IS DIGNITY      Toll Free: 0800 200 200      www.dwa.gov.za

## KEY CHALLENGE Building capacity for action

The NW&SMP sets out the challenges that must be addressed to ensure a secure water future. These will not be achieved without addressing the issue of capacity – the skilled people required to undertake the work. Implementing the NW&SMP Call to Action requires the right mix of skills and expertise in the water sector. This includes the capacity expressed as number of persons and skills expressed by qualification and experience required to fulfil the requirements in water resources and water services planning, management and operations.

36

29-Jan-18      WATER IS LIFE - SANITATION IS DIGNITY      Toll Free: 0800 200 200      www.dwa.gov.za

## KEY CHALLENGES

- **Financial sustainability:**
  - Without sufficient revenue from transfers and tariffs the sector will be unsustainable;
  - Attract investment into the water sector to close the current funding gap;
  - The investment requirement is in the order of R90 billion/pa with a funding deficit of R33 billion/pa (37%), how do we close this gap.

37

29-Jan-18

WATER IS LIFE - SANITATION IS DIGNITY

Toll Free: 0800 200 200 [www.dwa.gov.za](http://www.dwa.gov.za)

## 1<sup>st</sup> Order Investment Requirement (2017)

- Infrastructure capital replacement value = R 1 362 billion
- Total investment requirement (10 years) = R 899 billion  
= R 90 billion/ annum
- Total funding available = R 57 billion/ annum
- Funding deficit = R 33 billion per annum  
(37% shortfall)
- Financing options:
  - Reduce financial leakage and inappropriate expenditure
  - Improve cost recovery (metering, billing and collection)
  - Increase water tariffs (in consideration of affordability)
  - Private sector investments through PPP's and BOT/BOOT
  - Loan funding (subject to creditworthiness of WSAs/WSPs)
  - Bonds for water infrastructure (limited to water boards)

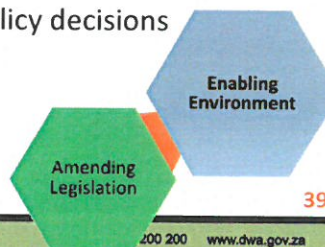
WATER IS LIFE - SANITATION IS DIGNITY

Toll Free: 0800 200 200 [www.dwa.gov.za](http://www.dwa.gov.za)

## KEY CHALLENGE Amending the legislation (1)

In the implementation of the National Water Act and the Water Services Act over the years since their promulgation, certain issues have been identified that require amendment. As a result, a National Water and Sanitation Bill is being developed which will amalgamate the National Water Act and the Water Services Act, and which will aim to:

- avoid the need to cross-read between the two pieces of legislation
- align the legislation to subsequent policy decisions including:



29-Jan-18

WATER IS LIFE - SANITATION IS DIGNITY

200 200 www.dwa.gov.za

## KEY CHALLENGE Amending the legislation (2)

- ✓ introducing mechanisms for the polluter pays principle
- ✓ the 'Use-It or Lose-it' principle under which any water which is not utilised reverts to the state
- ✓ the removal of temporary or permanent trading between authorised water users
- ✓ equity as the primary consideration in water allocation
- ✓ adopting a multiple water use approach in planning infrastructure
- ✓ the role of DWS in planning for regional bulk water infrastructure
- ✓ free basic water and free basic sanitation to be provided to indigent households only
- ✓ the establishment, powers and functions Regional Water Utilities and Water Services Authorities
- ✓ the establishment of one, national CMA, and
- ✓ the alignment of appeal functions with NEMA and other appeal mechanisms.

40

29-Jan-18

WATER IS LIFE - SANITATION IS DIGNITY

Toll Free: 0800 200 200 www.dwa.gov.za

### KEY CHALLENGE Amending the legislation (3)

- address issues pertaining to ownership of water and sanitation infrastructure, differential levels of service for sanitation, and appropriate technologies for sanitation
- address issues pertaining to water use authorisation
- enable the setting of tariffs for the whole value chain linked to levels of service and economic conditions, and
- ensure linkages between spatial planning and the NW&SMP, and create the mandate for a National Water and Sanitation Strategy.

In addition, the Water Research Act, now over 40 years old, must be amended to align to current governance best practice, contemporary institutional arrangements, and the PFMA. A Water Research Amendment Bill has been developed, which will be tabled before Parliament.

41

29-Jan-18

WATER IS LIFE - SANITATION IS DIGNITY

Toll Free: 0800 200 200 [www.dwa.gov.za](http://www.dwa.gov.za)

### What are we doing to address the RDI challenge?

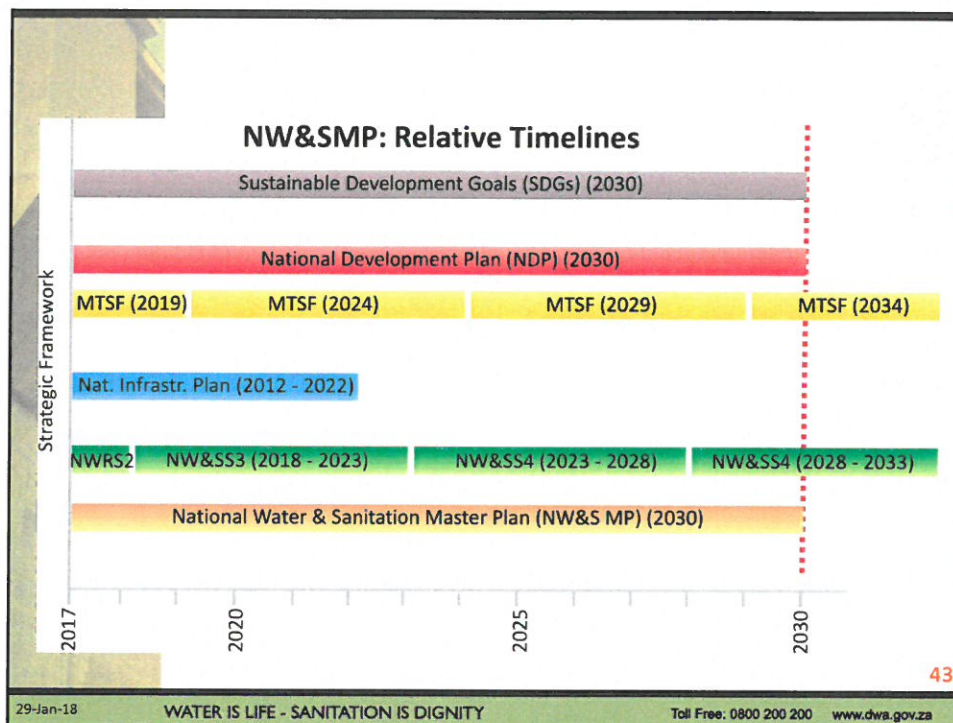
- DST is collaborating with DWS & WRC to develop a Water Research, Development and Innovation Roadmap
- The Roadmap identifies RDI gaps and opportunities and orientates the sector towards addressing these opportunities in a more coordinated way through investments in research, high end skills development and actions that shift new solutions into practise.
- The Roadmap forms the RDI basis of the NW&SMP and is also an important linker to the Industrial Policy Action Plan ambition to drive the water industry in areas of sanitation, membranes and waste water treatment
- A Water RDI Roadmap Implementation Unit has been put in place in partnership between DST and WRC
- The overall minimum investment required to achieve all aspects of the RDI master plan over a 10-year period is R 8.4 billion

42

29-Jan-18

WATER IS LIFE - SANITATION IS DIGNITY

Toll Free: 0800 200 200 [www.dwa.gov.za](http://www.dwa.gov.za)



## READY FOR THE FUTURE – LET’S DO IT!

- South Africa is a water stressed and climate vulnerable region.
- The NW&SMP Call to Action is an important step in driving action to achieve water security for all.
- South Africans share common interests and challenges in the pursuit of water security.
- Achieving water security requires sound evidence to inform policy and dialogue, good governance, advances in research and technology, the mobilisation of finance and investment, management of climate risks, and cooperation in managing transboundary water resources.
- It requires balancing supply and demand, redistributing water, managing water and sanitation services effectively, regulating water with a focus on high impact use, improving raw water quality and protecting and restoring ecosystems.
- These themes orient the NW&SMP and provide a rallying point for governments, civil society, the private sector, researchers and innovators, and the international community.

44

29-Jan-18 WATER IS LIFE - SANITATION IS DIGNITY Toll Free: 0800 200 200 www.dwa.gov.za

## READY FOR THE FUTURE – LET’S DO IT!

- The NW&SMP sets out priority actions and investments until 2030. After two years, a second NW&SMP (2020–2025) will reflect on progress and update the priorities, followed by a third (2025–2030) five years later.
- This iterative process, supported by a robust monitoring and evaluation framework, will keep the country focused on achieving the goals of the NW&SMP by the year 2030.

45

## ARE YOU UP TO THE CHALLENGE?

Download  
NW&SMP  
documents from  
[www.dws.gov.za](http://www.dws.gov.za)

Written comment  
from institutions  
by 31 January 2018



Thank yo

46