Summit on the Water and Sanitation Master Plan and Water User Licence Regime

10 February 2021

Microsoft Teams Platform

PURPOSE

- To present aspects of the National Water and Sanitation Master Plan (NW&SMP) related to the agricultural sector
- To share DWS' developments in the water use authorisation regime required to support the agricultural sector

SETTING THE SCENE

- Current population: 58.8 million people (STASSA 2019 mid-year population estimates)
- 19 million people no access to reliable drinking water.
- 14.1 million people no access to safe sanitation
- Only 64% of households have a reliable water supply service
- 56% of waste water treatment works
- 44% of water treatment works are in a poor or critical condition
- 41% of municipal water does not generate revenue. 35% is lost through leakage (R9.9 billion lost annually)
- 33% of the remaining wetlands are critically endangered (more than 50% already lost)
- 61% of the water is for agriculture and only 5% of agricultural water is used by black farmers
- More than 70% of commercial farms in SA are owned by white farmers; they use 95% of water allocated to the agricultural sector
- South Africa is facing a projected 17% water deficit by 2030 if it doesn't successfully implement the planned measures

Securing Water for South Africa – introducing a National Water & Sanitation Master Plan

- In order to secure water availability into the future, the Department of Water and Sanitation (DWS) has developed a **National Water and Sanitation Master Plan (NW&SMP)**
- **The NW&SMP:**
  - Is a "Call to Action" which seeks to rally all stakeholders in South Africa to work together to address the challenges confronting the Water and Sanitation Sector
  - Will enable the achievement of the targets set out in the National Development Plan (NDP) Vision for 2030 and the Sustainable Development Goals (SDG Goal 6 2030), of affordable and reliable access to sufficient and safe water and hygienic sanitation for socio-economic growth and well-being, with due regard to the environment
  - Calls for the development of an implementation plan to address key priority areas and create economic and transformative opportunities **towards water security and dignified sanitation for South Africa**.

Key elements of the NW&SMP

STRUCTURE OF NW&SMP

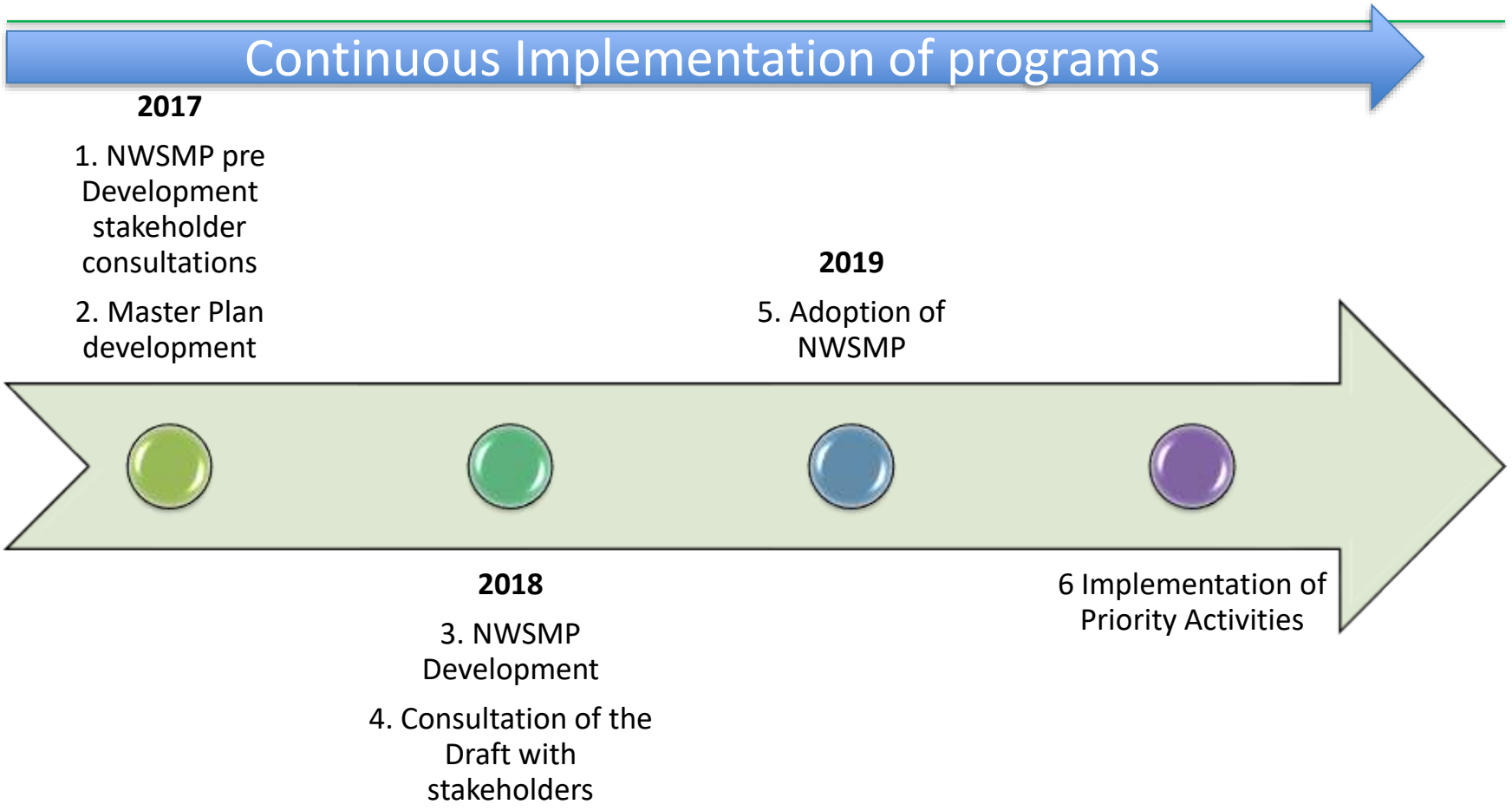
Volume 1: Call to Action briefly outlines the milestone challenges and the recommended actions

Volume 2: Plan to Action provides detailed account and analysis of the rationale for challenges and actions, and addresses future inter-governmental collaboration, M&E protocols and continuous stakeholder engagement during implementation.

Volume 3: Schedule of Actions provides a detailed consolidated and prioritised implementation plan with costs covering all the actions required across the sector to achieve the objectives of the plan.

Volume 4 : An implementation guideline to assist Water Services Authorities (WSAs) in their development of their Municipal Action Plans.

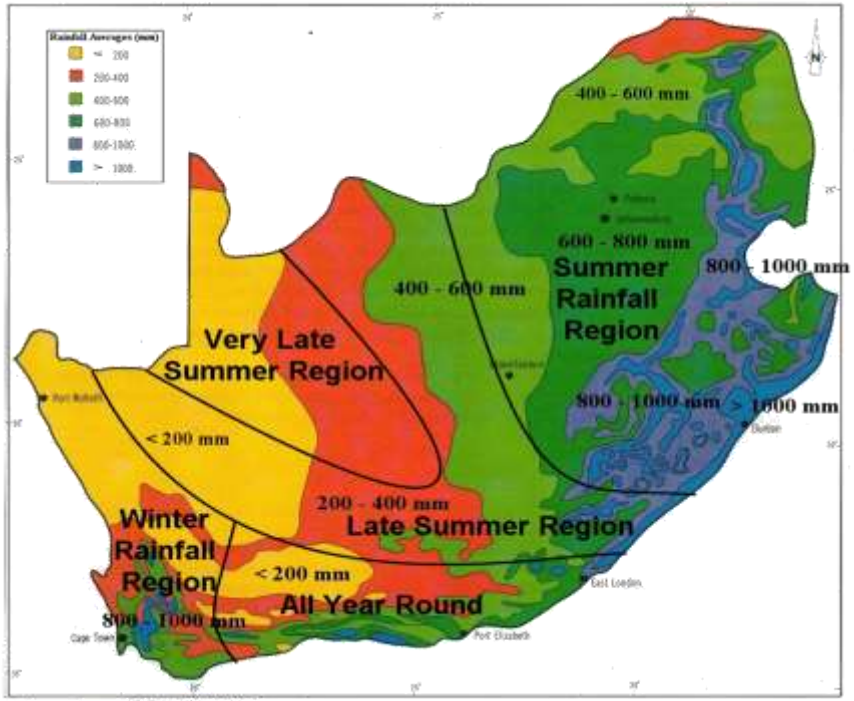
STATUS AND MILESTONES

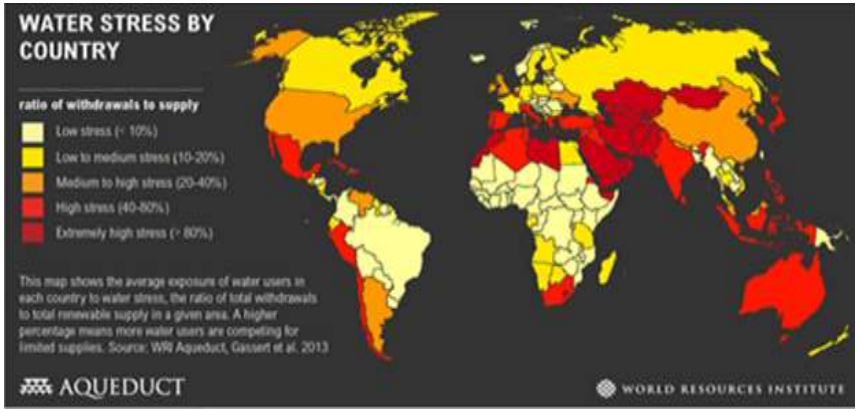


Brief Focus on the Water Resources Component of the National Water and Sanitation Master Plan

Overview of South Africa's Water Resources

- Water is a **scarce** and strategic resource
- Water resources presents spatial and temporal challenges requiring large inter-basin transfer schemes
- Limited opportunity for large scale local fresh water resource development
- Increasing competition across water use sectors / users
- **Mean annual rainfall**
  - South Africa = 500mm (World average = 860mm)
  - 65% of SA < 500mm
  - 21% of SA < 200mm
- Severe and prolonged **droughts** – 10 years in some systems
  - 25% - drained by perennial rivers (seasonal)
  - 75% - drained by seasonal to episodic rivers (event related).



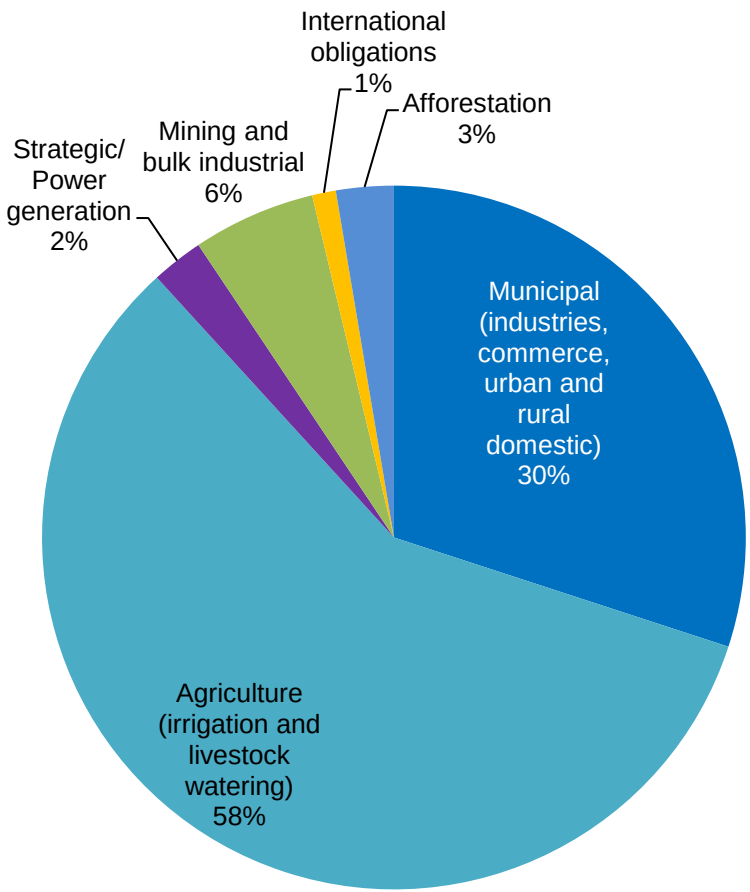


Water use per sector projections

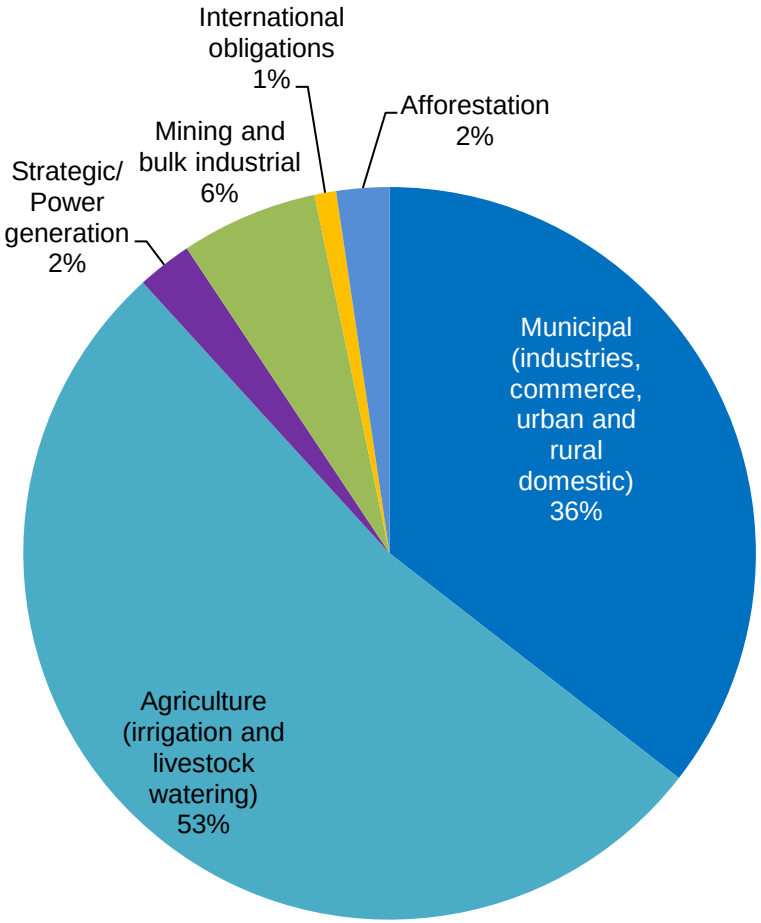
User sector*	Water requirements (million m³/annum)				
	2015	**2020**	**2025**	**2030**	**2040**
Municipal (industries, commerce, urban and rural domestic)	4 447	4 900	5 400	5 800	6 600
Agriculture (irrigation and livestock watering)	9 000	9 500	9 600	9 700	9 800
Strategic/Power generation	362	390	410	430	450
Mining and bulk industrial	876	921	968	1 017	1 124
International obligations	178	178	178	178	178
Afforestation	431	432	433	434	434
Total	**15 294**	**16 321**	**16 989**	**17 559**	**18 586**

Water use per sector 2020 & 2040 projections

2020 Water Use per Sector



2040 Water Use per Sector Projections



Current and potential areas under irrigation

The National Development Plan indicates that irrigation can be expanded by 500 000 hectares but the Second Edition of the National Water Resource Strategy (NWRS 2) states that water is available only for expansion of about 80 000 hectares due to limitations in water resource availability.

DAFF calculations are as follows:

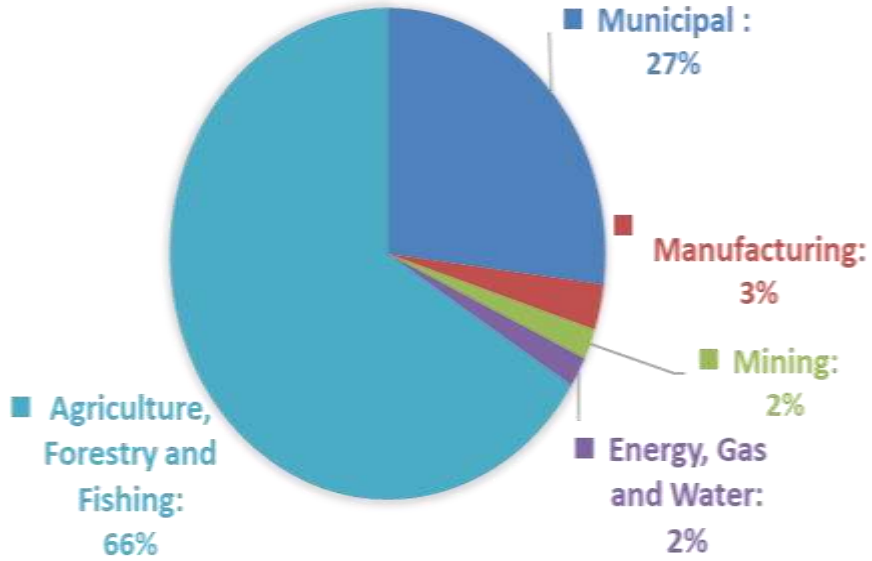
Provinces	Areas under irrigation schemes (revitalization)	Potential development and expansion of irrigation areas
Eastern Cape	8 362	7 604
Free State	150	3 000
Gauteng	-	-
Kwazulu Natal	4 235	10 000
Limpopo	22 909	-
Mpumalanga	11 139	3 000
Northern Cape	44 658 (includes Vaalharts)	5 000
North West	20 042 (includes Hartebeespoort)	1 259
Western Cape	257	10 000
Total	**111 752**	**39 863**

Key message

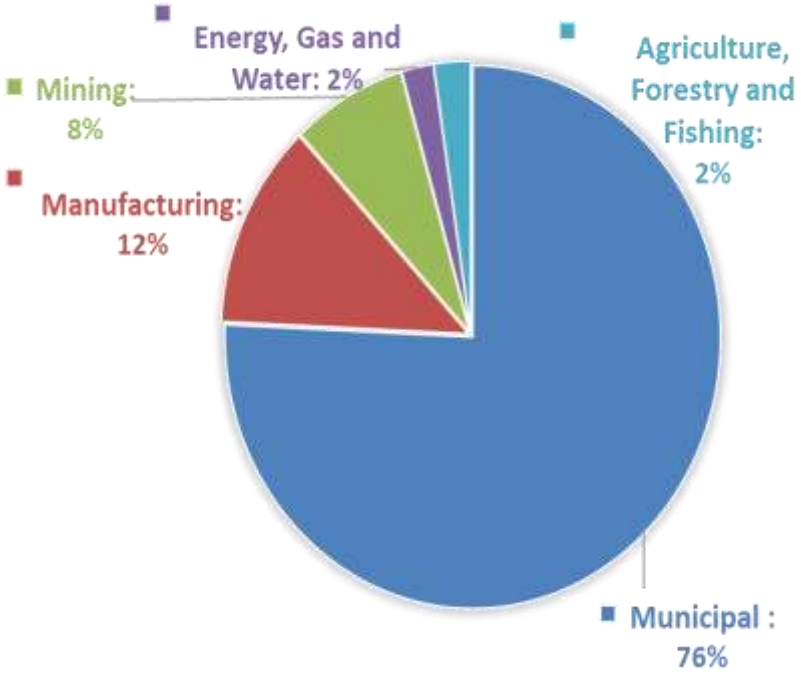
- *Need to focus on revitalisation of existing schemes which already have water before focusing on expansion*

GDP contribution per sector versus water use per sector

Water Use (DWS National Water & Sanitation Master Plan)



GDP Contribution (Stats SA PO441)



Note that the level of assurance at which agricultural water is supplied is lower than that of other sectors.

Water Use Authorisation Applications (WUAs) Annual Performance 2015/16 to 2018/19

2015-16	2016-17	2017-18	2018-19	2019/20
91% water use authorisation applications finalised as per the water use authorisation guidelines **(262 out of 288)**	**68%** water use authorisation applications finalised as per the water use authorisation guidelines **(275 out of 404)**	**95%** water use authorisation applications finalised as per the water use authorisation regulations **(447 out of 469)**	**82%** water use authorisation applications finalised as per the Water use authorisation regulations **(496 out of 601)**	**88 %** water use authorisation applications finalised as per the water use authorisation **(645 out of 678)**

Water use licences granted by the Department from 2010/11 up to December 2020

Regions	Number of authorizations HDI and Black Owned Companies	Number of authorizations HAI and White owned Companies	Number of authorizations Government Entities	Total
Eastern Cape	217	362	192	771
Free State	42	354	42	438
Gauteng	14	219	199	432
Kwa-Zulu Natal	1270	509	133	1912
Limpopo	651	226	56	933
Mpumalanga	95	808	153	1056
North West	31	399	173	603
Northern Cape	57	814	50	921
Western Cape	24	631	191	846
Grand Total	**2 401**	**4 322**	**1 189**	**7 912**
Percentage	**30%**	**55%**	**15%**	**100%**

HDI's (individuals and Government Entities) authorized 45%

HAI's 55% authorized

Water use licences per sector granted by the Department from 2010/11 up to December 2020

Row Labels	Agriculture	Property Development	Forestry	Industry	Local Government	Mining	Grand Total
Eastern Cape	252	19	281	43	175	1	771
Free State	337	7	0	11	40	43	438
Gauteng	42	65	1	94	164	66	432
Kwa-Zulu Natal	168	47	1493	57	110	37	1912
Limpopo	750	29	25	40	47	42	933
Mpumalanga	241	48	31	140	98	498	1056
North West	86	150	0	75	184	108	603
Northern Cape	678	12	0	43	42	146	921
Western Cape	443	110	9	80	194	10	846
Grand Total	2997	487	1840	583	1054	951	7912

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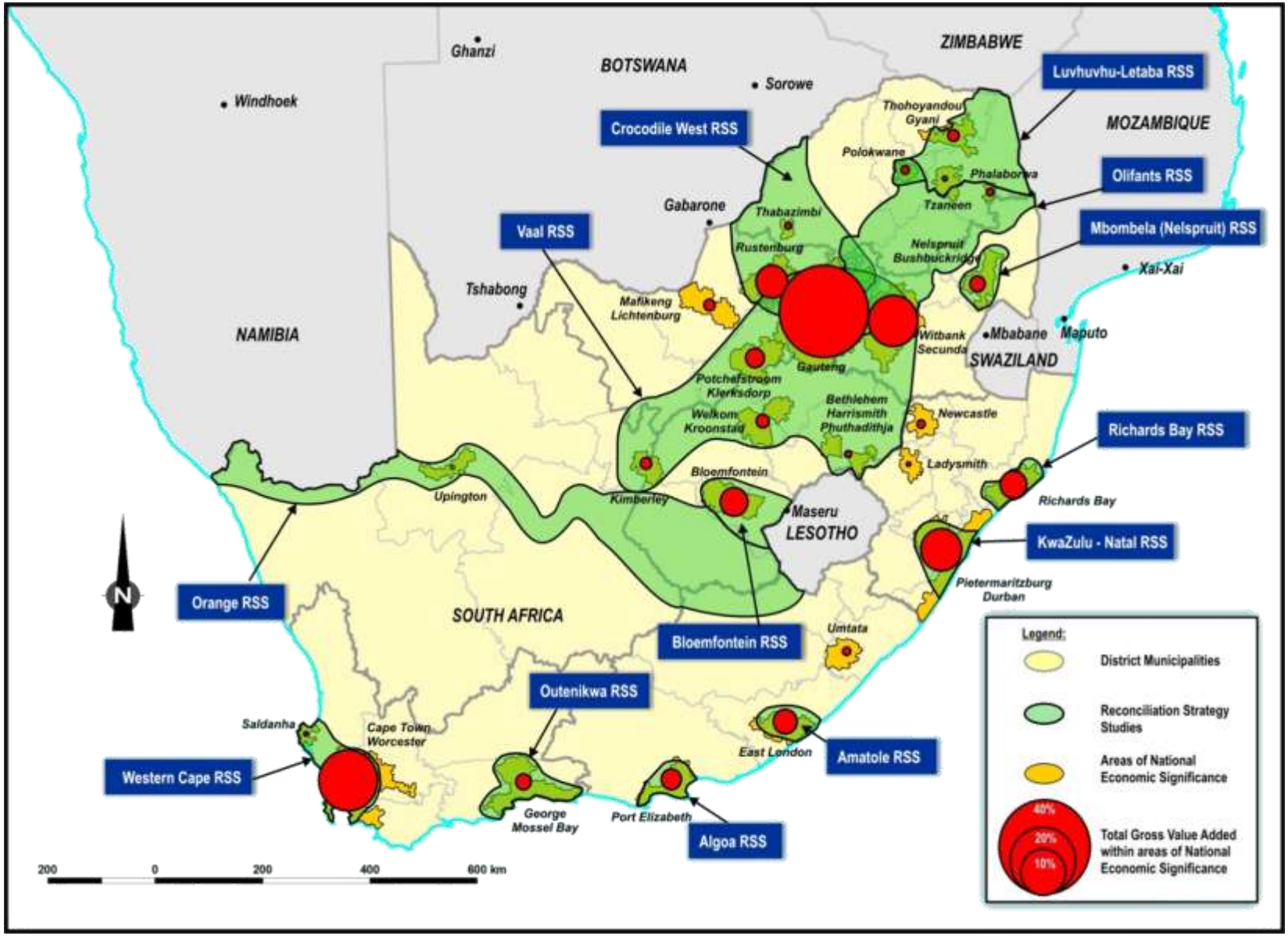
HAI's 55% authorized

Key large water resource systems in SA

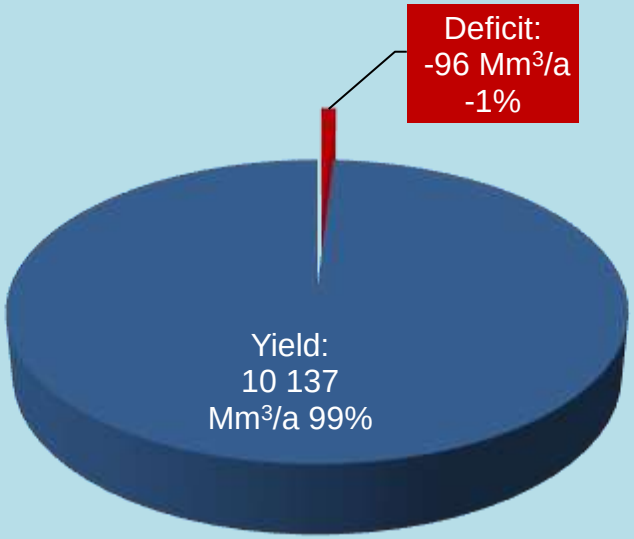


Water availability vs requirements in key large water resource systems

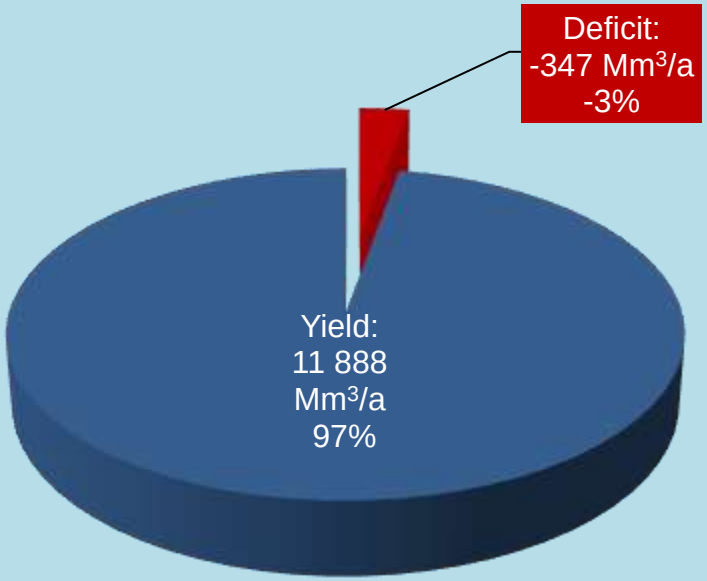
System	Province	Total Storage capacity in Mm^3	Current In Mm^3 /Year, base year 2019			Future in Mm^3 /Year, projected for 2040		
			Availability (integrated system yield)/ scheme yield	Demands (estimated requirements)	Deficit (-) / Surplus (+)	Availability (integrated system yield)/ scheme yield	Demands (estimated requirements)	Deficit (-) / Surplus (+)
Western Cape	WC	895	590	590	0	1 160	1 125	35
Mosselbay (Outeniqua)	WC	49	62	68	-6	62	90	-28
Algoa	EC	281	195	182	13	225	258	-33
Amathole	EC	241	104	115	-11	124	125	-1
Crocodile West	LP, NW	495	1 200	1 170	30	1 460	1 365	95
Polokwane WSS	LP	254	268	261	7	433	408	25
Letaba & Levubu	LP	472	243	215	28	276	277	-1
Olifants	LP	1 859	425	458	-33	442	566	-124
Crocodile East	MP	340	67	62	5	76	76	0
Integrated Vaal River System	MP, NW, GP, FS	10 566	3 154	3 120	34	3 640	3 600	40
Orange	NC, FS, EC	7 996	2 950	3 097	-147	2 766	3 150	-384
Mgeni and Coasts	KZN	978	499	561	-62	736	705	31
Richards Bay	KZN	413	239	225	14	290	292	-2
Bloemfontein	FS	84	105	104	1	162	191	-29
TOTAL		**25 912**	**10 137**	**10 233**	**-96**	**11 888**	**12 235**	**-347**

Overall projected growth in yield and demand

2019 Demand (10 233 Mm^3) Exceeding Supply



2040 Projected Demand (12 235 Mm3) Exceeding Projected Supply

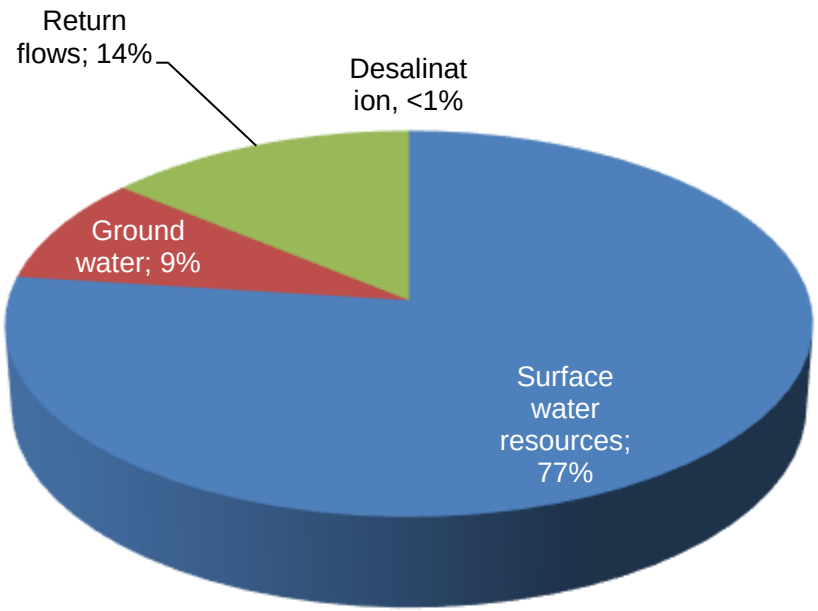


Although the charts shows a national deficit, there are localized areas with surpluses that can spur on much needed economic revival whilst new investments are being made to develop additional water resources.

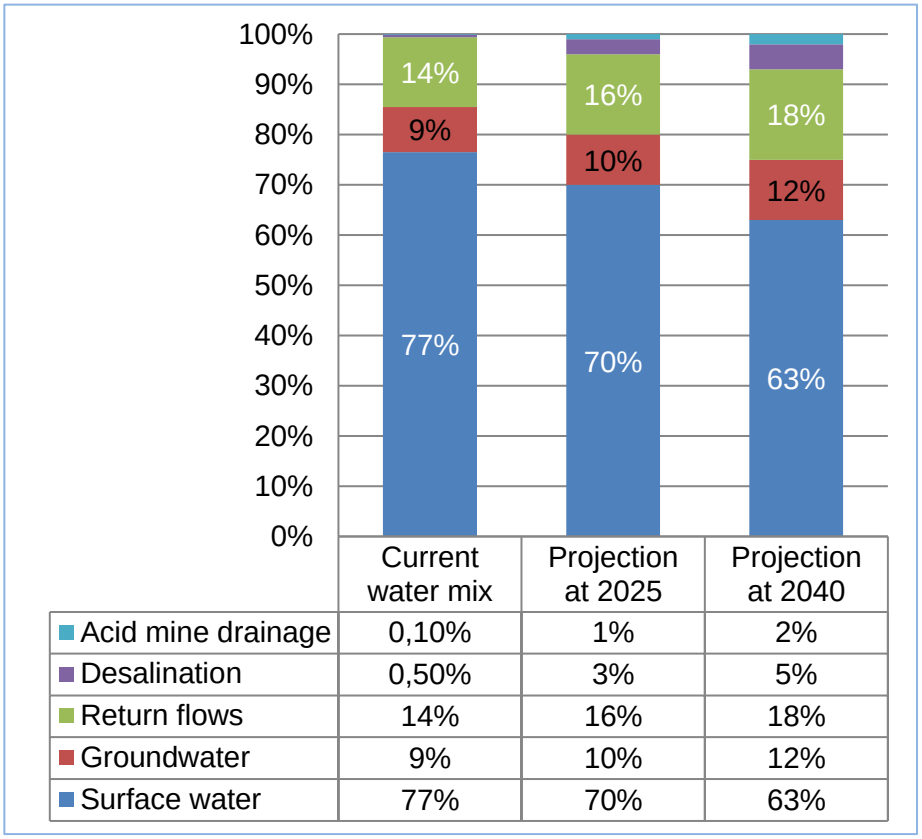
Diversification of the water resource mix to ensure water resilience

Current water resource mix

Water use per source type at 98% assurance level

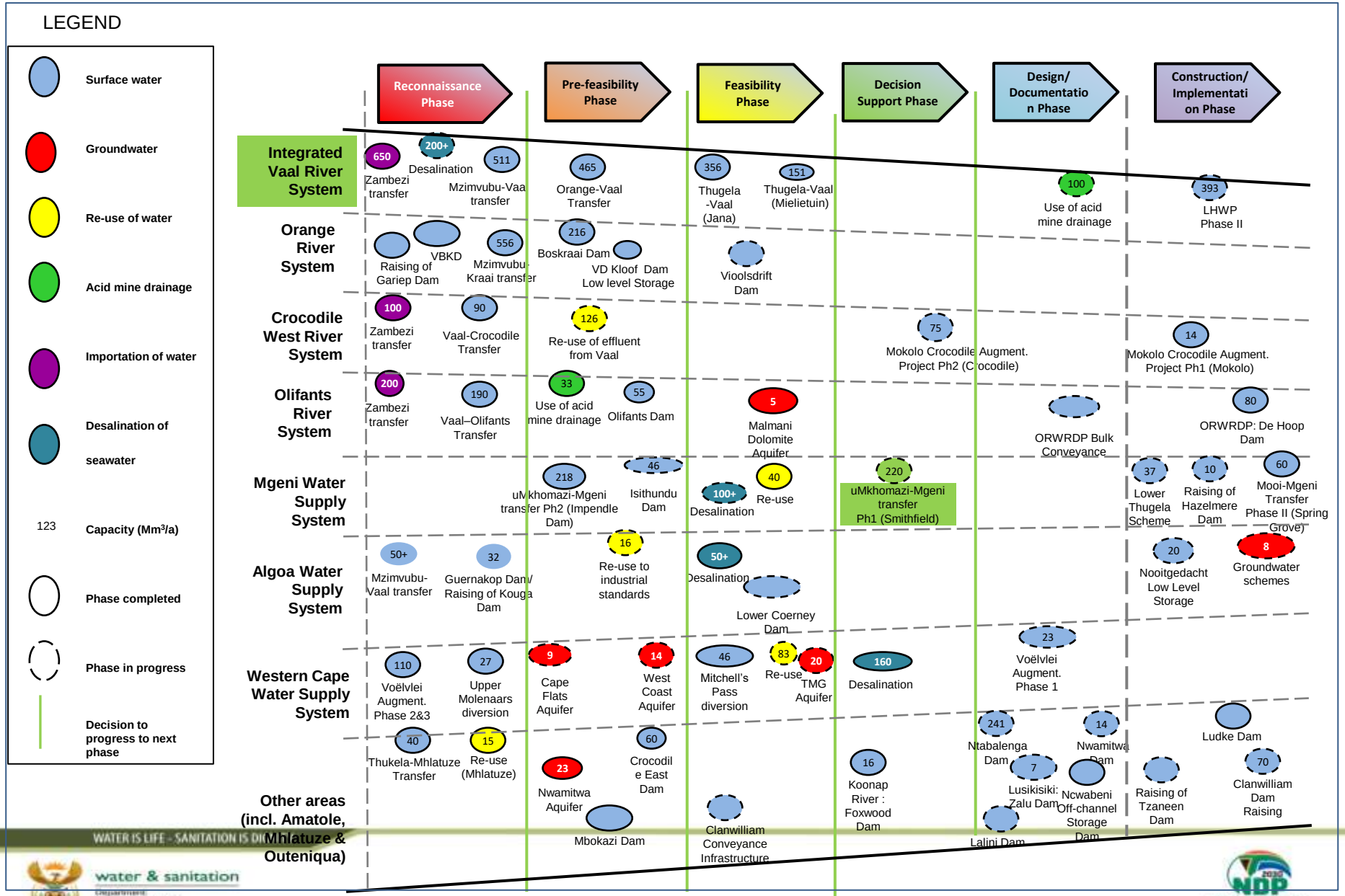


Progression towards the desired future water resource mix



	Current water mix	Projection at 2025	Projection at 2040
Acid mine drainage	0,10%	1%	2%
Desalination	0,50%	3%	5%
Return flows	14%	16%	18%
Groundwater	9%	10%	12%
Surface water	77%	70%	63%

Water Resource Development Projects Funnel

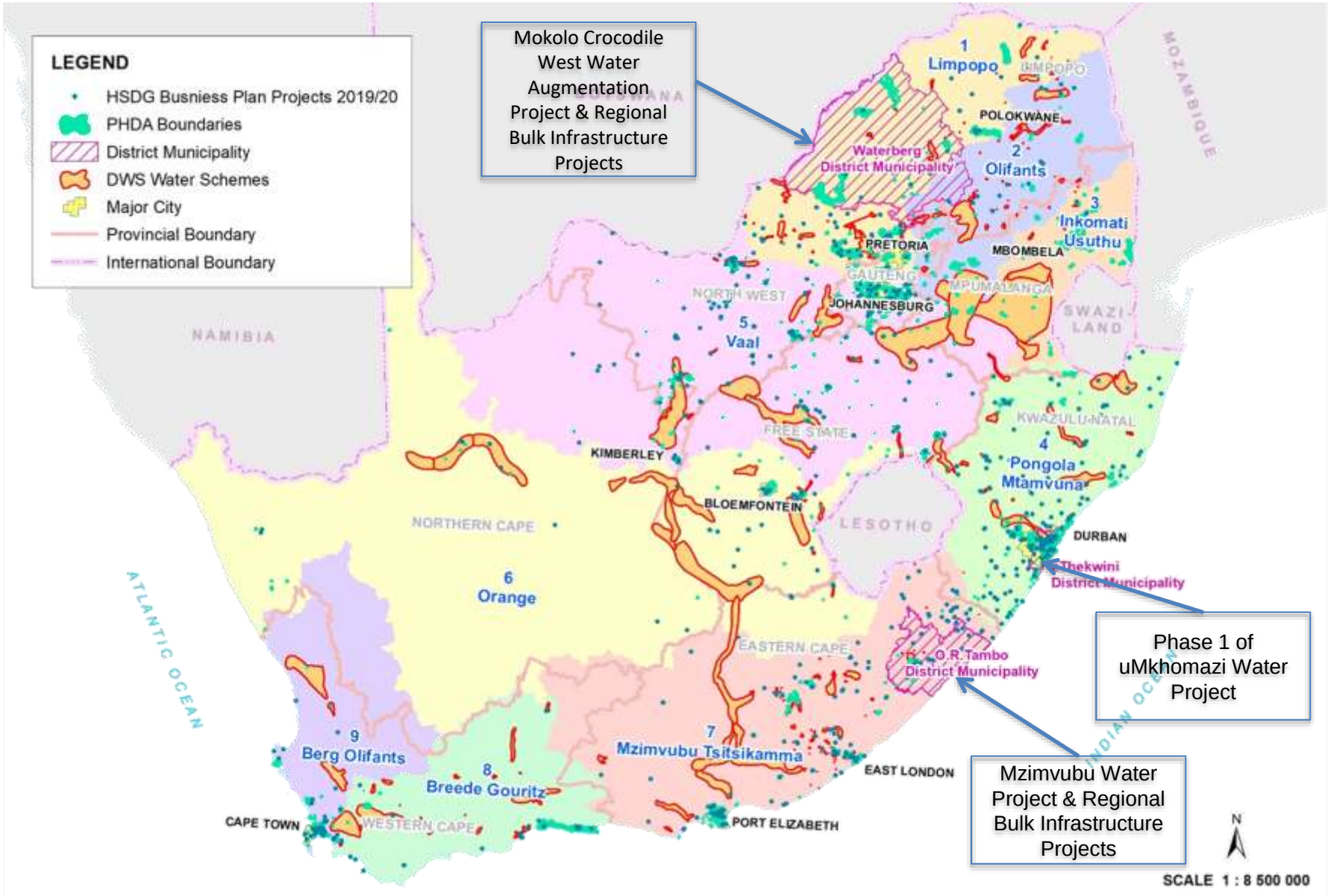


Water Resource Development Programme

Water Resource (WR) System	Current Prioritized Water Resource Development Option and Estimated Date of Water Delivery		
	2020 - 2030	2031 - 2040	2041 – 2050
Integrated Vaal River System	Phase 2 of Lesotho Highlands Water Project by 2025 (R32.6 Billion)	Use of Acid Mine Drainage	Thukela Water Project (Jana & Millietuin Dam s)
Orange River System	Gariep Pipeline by 2024 (R8 Billion), Vioolsdrift Dam in the Lower Orange (R6 Billion)	Dam at Verbeeldingskraal in the Upper Orange River	
Crocodile West River System	Mokolo Crocoldile (West) Water Augmentation Project (MCWAP) by 2024 (R15 Billion)	Re-Use of Effluent	Re-Use of Effluent
Olifants River System	Olifants Water Resource Development Project (ORWRDP) Phases 2B (R6.6 Billion) , 2D (R1.8 Billion) , 2E (R0.5 Billion) & 2F (R2.3 Billion) Exploitation of the Malmani Dolomitic Groundwater Aquifer	Re-Use of Effluent	Olifants Dam (Possibly Rooipoort Dam)
Mgeni Water Supply System	Phase 1 of uMkhomazi Water Project by 2026 (Dam at Smithfield , transfer tunnel and Associated Works) (R18.5 Billion)	Re-Use of Effluent	Phase 2 of uMkhomazi Dam (Dam at Impendle and Associated Works)
Algoa Water Supply System	Lower Coerny Balancing Dam Ground Water Development Scheme	Re-Use of Effluent	Kouga Dam Augmentation Scheme
Western Cape Water Supply System	Berg River – Voelvlei Augmentation Scheme (BRVAS) by 2021 (R0.9 Billion) Table Mountain Group Aquifer Scheme	Breede-Berg River Augmentation Scheme (Mitchell's Pass Diversion & Raising of Voelvlei Dam)	Raising of Lower Steenbras Dam Desalination of Sea Water
Eastern Cape Water Schemes	Mzimvubu Water Project (R17.9 Billion), Koonap River Development Project (Foxwood Dam) (R3 Billion), Lusikisiki Water Project (Zalu Dam) (R2 Billion)	Groundwater Development	Phase 2 of Mzimvubu Water Project
Letaba Water Supply System	Groot Letaba Water Augmentation Project (GLeWAP) (Nwamitwa Dam (R1.7 Billion) & Raising of Tzaneen)	Groundwater Development	Water Re-Use
Olifants-Doorn Water Scheme	Clanwilliam Dam Raising (R 3.3 Billion) Phase of Conveyance System from the Raised Clanwilliam Dam (R6 Billion)	Phase of Conveyance System from the Raised Clanwilliam Dam	Groundwater Development

Key Message: An estimated funding of **at least R126 Billion** is required to finance key water resource development projects **in the next 10 years.**

Existing water schemes overlaid by Human Settlement Development Grant (HSDG) projects & Priority Housing Development Areas (PHDAs)



ALIGNMENT OF THE NW&SMP AND APP/BUSINESS PLANS THROUGHOUT THE WATER SECTOR

In Summary, Key NW&SMP Actions are to:

- Reduce water demand and increase supply
- Redistribute water for transformation
- Manage effective water and sanitation services
- Regulate the Water and Sanitation Sector
- Improve raw water quality
- Protect and restore ecological infrastructure
- Create an effective institutional enabling environment
- Manage data and information
- Build capacity
- Ensure financial sustainability
- Amend legislation
- Enhance research, development and innovation

Business Process Re-engineering : 90 Day Turnaround

300 Days

0	Pre-application enquiry	0
1	Application submitted	1
2	Responsible authority acknowledges receipt of the application	10
3	Applicant confirms arrangements for site inspection with an allocated case officer	5
4	Site inspection to confirm water uses, determine information requirements and the need for public participation	20
5	Confirm requirements for water use license application technical report based on site visit and meeting	5
6	Compilation, consultation and submission of water use licence application technical report by applicant	105
7	Reject / Accept water use licence application technical report	10
8	Assessment and decision	144

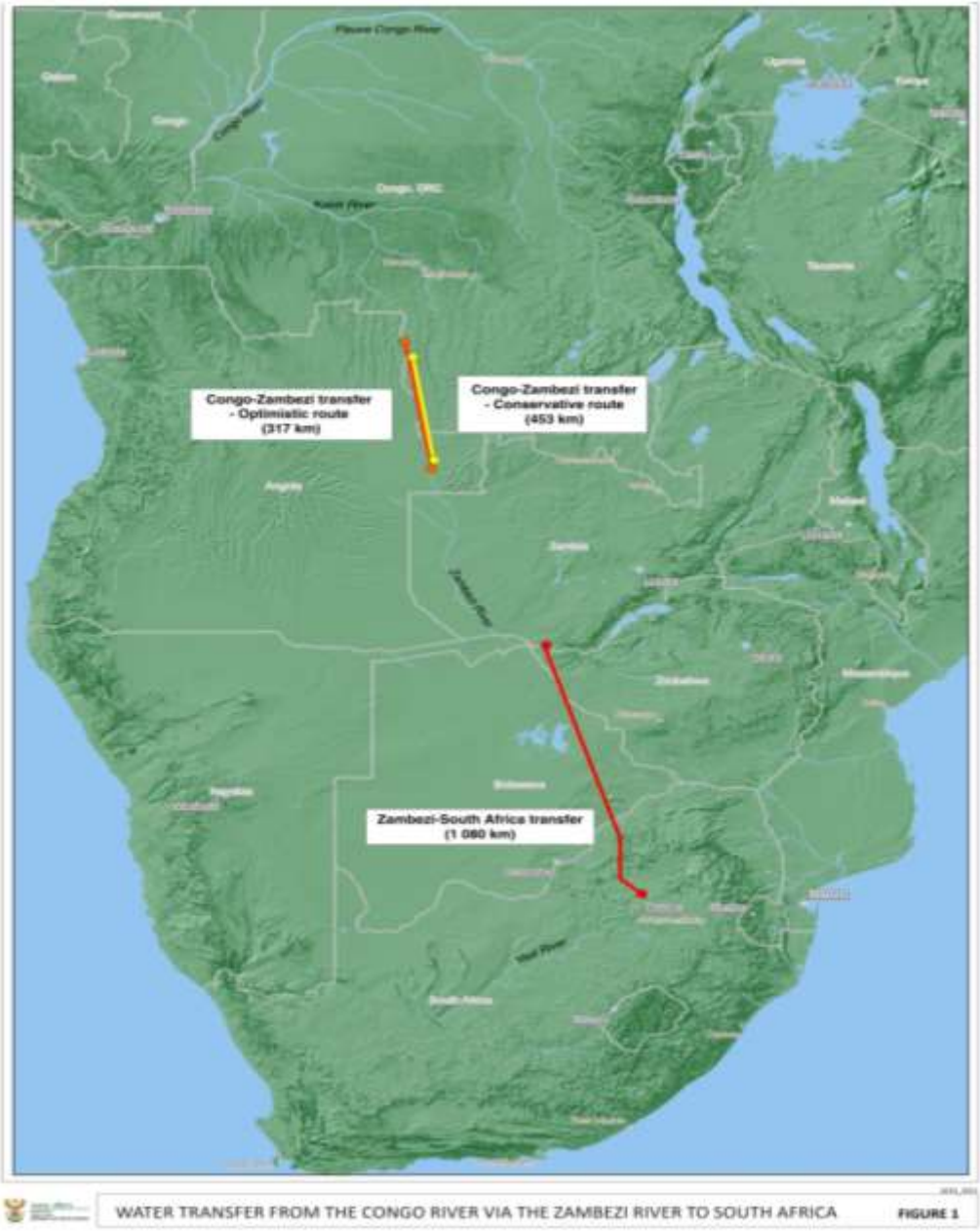
90 Days

No	Step	Number of days
0	**Pre-application and compilation of application by applicant in consultation with DWS (inclusive of technical reports + Public Participation (60 days)(streamlining to DEFF)**	0
1	Submit application and supporting documents	1
2	Accept or reject application	3
3	Final Assessment – scrutiny of technical report for specialist comments	70
4	Decision	16
Total		**90**

Recommendations

- It is recommended stakeholders take note and participate in the implementation of the National Water and Sanitation Master Plan (NW&SMP) which is key in securing water resource availability and ensuring adequate provision of water and sanitation services in south Africa
- Stakeholders take note of DWS' developments in the water use authorization regime, which improve turnaround time from 300 to 90 days

THANK YOU



WATER TRANSFER FROM THE CONGO RIVER VIA THE ZAMBEZI RIVER TO SOUTH AFRICA FIGURE 1