Presentation Outline

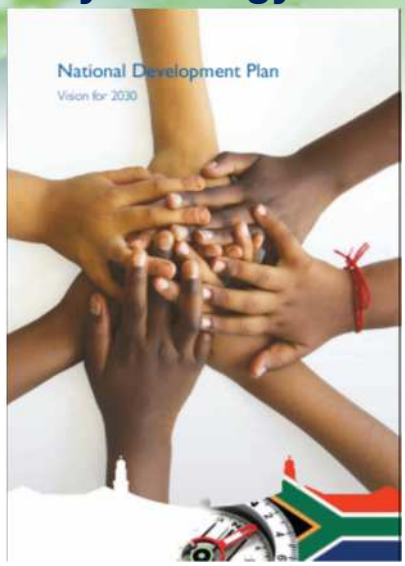
- Status of water losses within the 8 Large Water Supply System
  - 2016 results
- Challenges with effecting WCWDM progress
  - Budgets
  - Planning
  - Priorities
- Conclusions

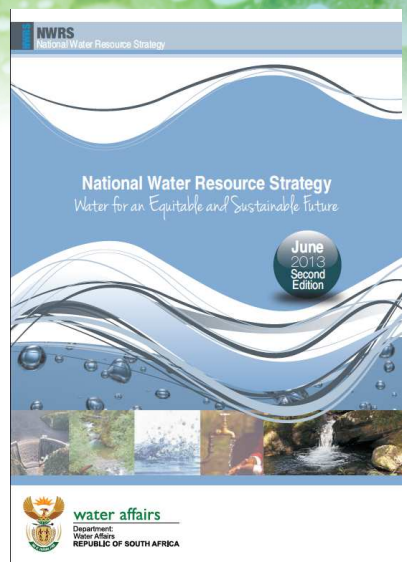
DWS APP PPI 1.4.1. Status Report on water losses within the 8 large water supply

Objectives

- Measure the progress made with the implementation of WCWDM interventions, within the eight large water supply systems (WSS)
- Includes Metros and most of the major cities.
- The key demand centres, have potential to reduce SIV, water losses, NRW and subsequently improve WUE
- Monitoring and reporting are very difficult if municipalities do no calculate and/or submit their water balance information

Key Strategy Documents

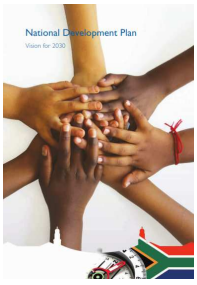




STRATEGY ANCHORS

National Development Plan – South Africa's Vision

- Recognises that reducing growth in water demand is as important as increasing supply and estimates that it will be possible to reduce water demand levels in urban areas to 15% below the 2012 business-as-usual levels.
- Achievement of reductions of this scale will require focussed programmes which will reduce leakage in distribution systems and will yield more efficient use in domestic and commercial applications.



- Proposes a national WCWDM Programme with clear national and local targets for 2017 and 2022, and sub-programmes focussed on municipalities, industry and agriculture

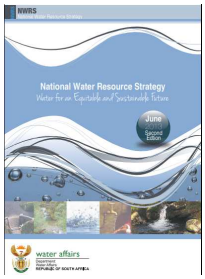
STRATEGY ANCHORS

National Water Resource Strategy (2)

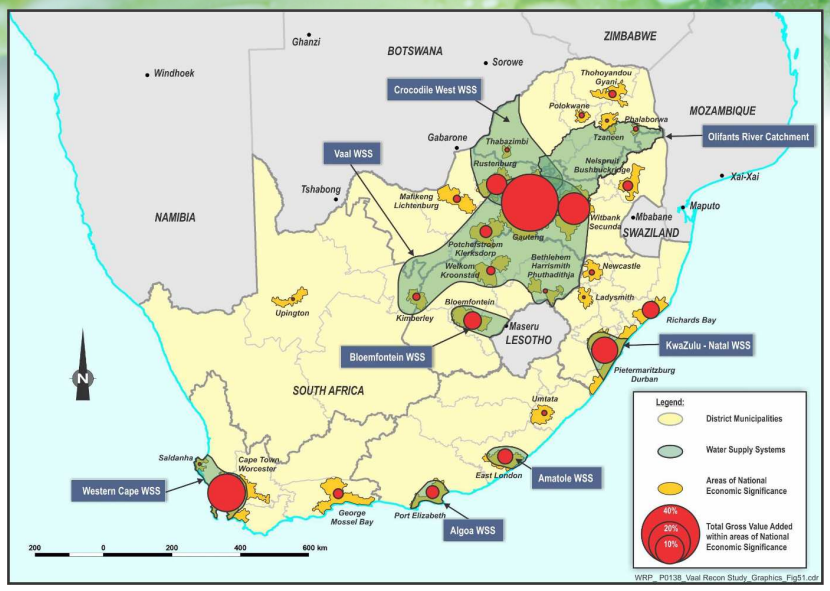
- Spells out "Implementing water use efficiency, conservation and water demand management" is a non-negotiable principle.
  - Resource development and expansion cannot be substantiated unless WC/WDM fully implemented

- The strategy highlights the need to:
  - reduce water losses and increase water use efficiency;
  - promote water saving through incentive-based programmes incl smart technology, rebate - water savings;
  - fast-track the implementation of WCWDM in consideration of the elevated status in the National Gov's Plan of Action (Outcome 10) = set a target of 15% in 2014 for reduction of water losses in distribution systems.
    - Note: Reconciliation Strategies = context- and water supply system specific targets.

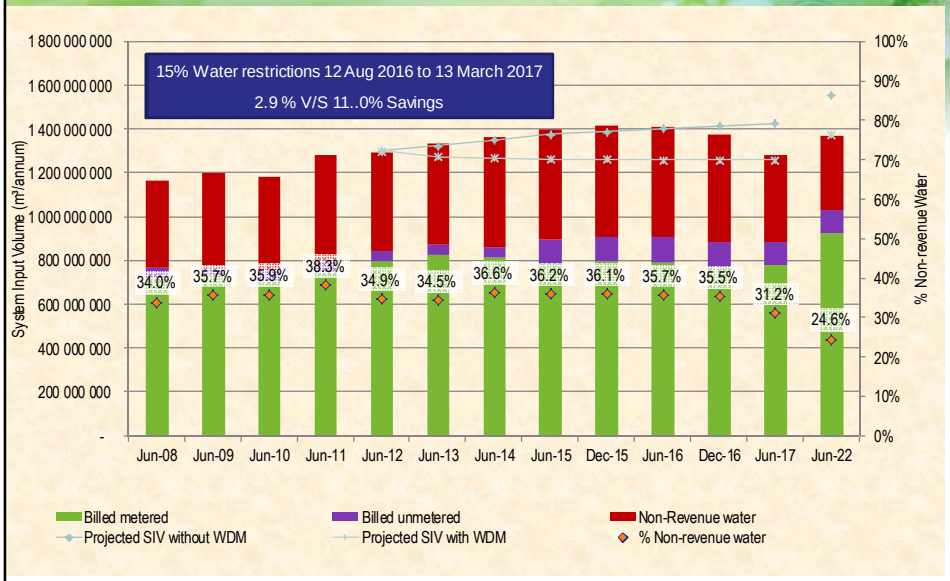
  - Provides for public-private initiatives to tackle shared objectives, such as water losses and water scarcity as a shared concern.



8 Large water supply system



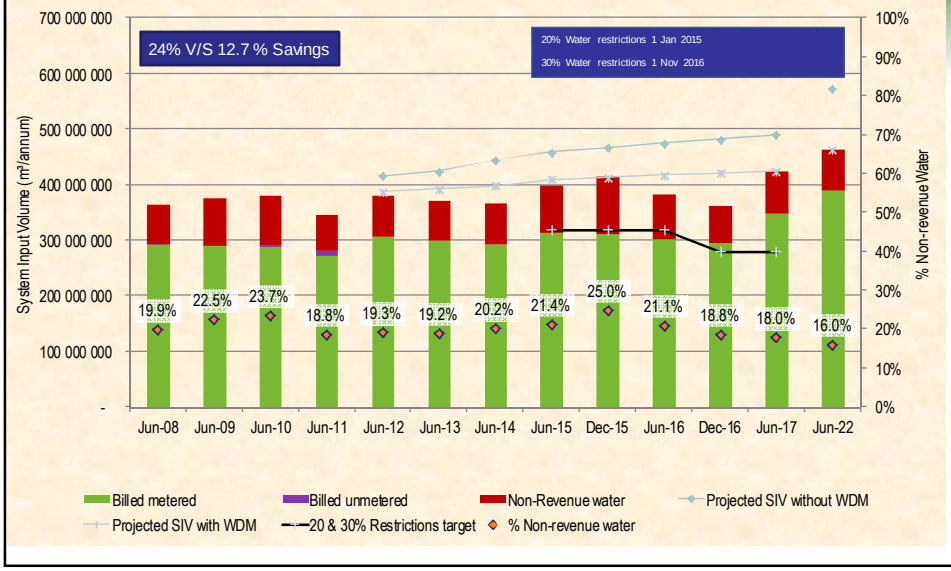
Integrated Vaal River water supply system



- Municipalities in the IVRS managed to reduce their annual demand by 39 M m³/a from June 2016 to Dec 2016
- Mainly through water restrictions
- The reduction in the demand is positive, considering the municipalities in the IVRS exceeded the high population without WCWDM projections by 0.8 %

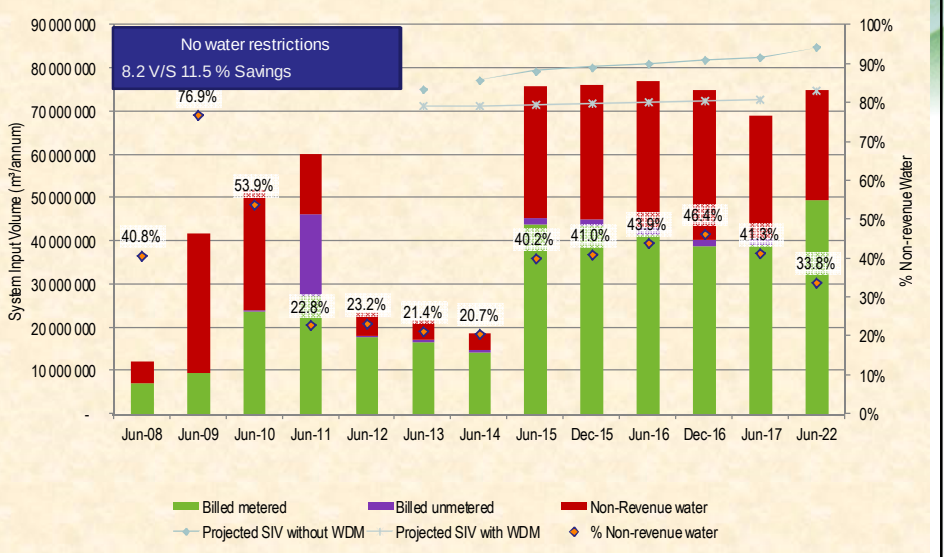
- **It is considered highly unlikely that municipalities in the IVRS will be able to reduce their consumption by 9% to achieve their 2017 target**

Western Cape water supply system

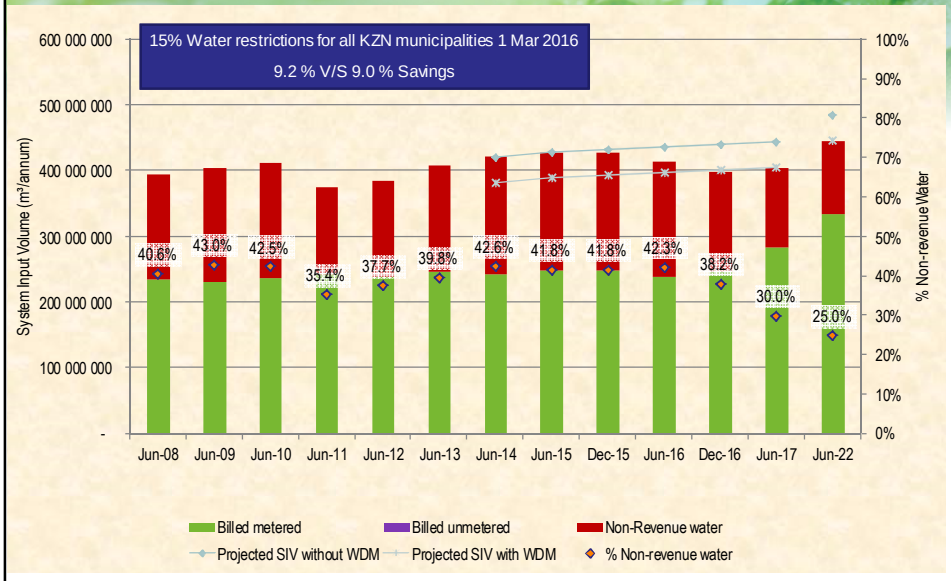


- Municipalities included in the Western Cape water supply system (WCWSS) have reduced the demand aggressively through WDM measures
- Achieved savings of 24.6% against their target of 12.7% by December 2016.
- Swartland, Drakenstein and Stellenbosch should endeavour to sustain their water losses to below 15% (Best Practices).
- It will be a significant challenge to reduce further since we are now operating at or close to the economic levels of leakage.
- While municipalities in the WCWSS have done well to achieve their targets, water restrictions could not be avoided which highlights the severity of the drought

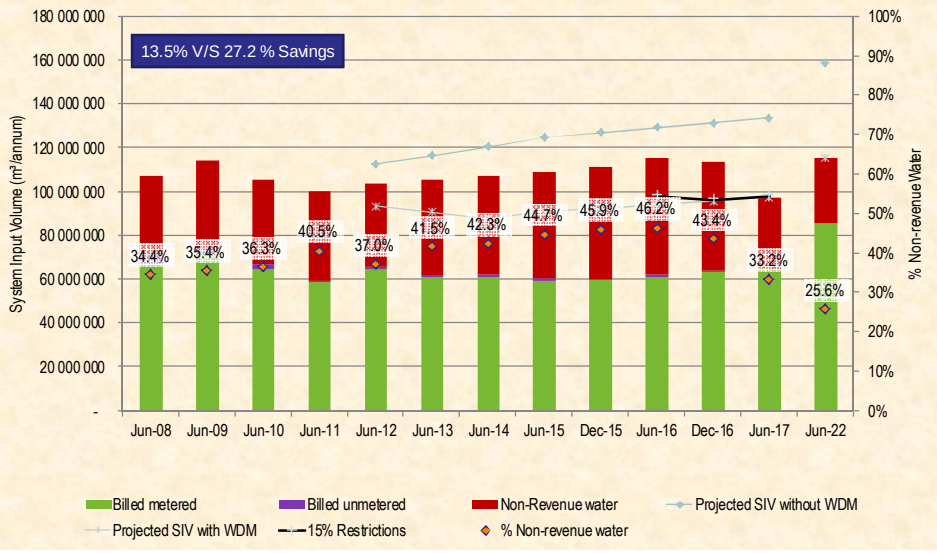
Crocodile (West) WSS



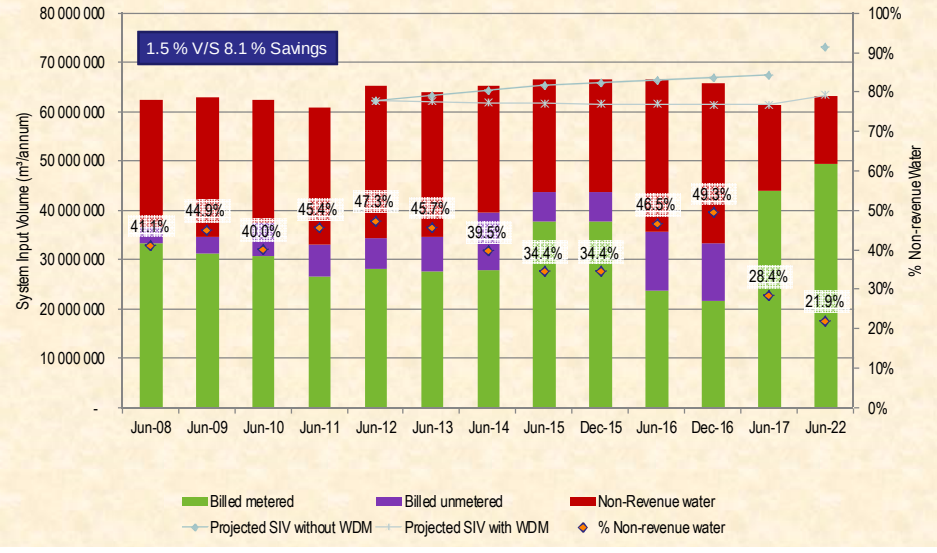
KZN Coastal Metro water supply system



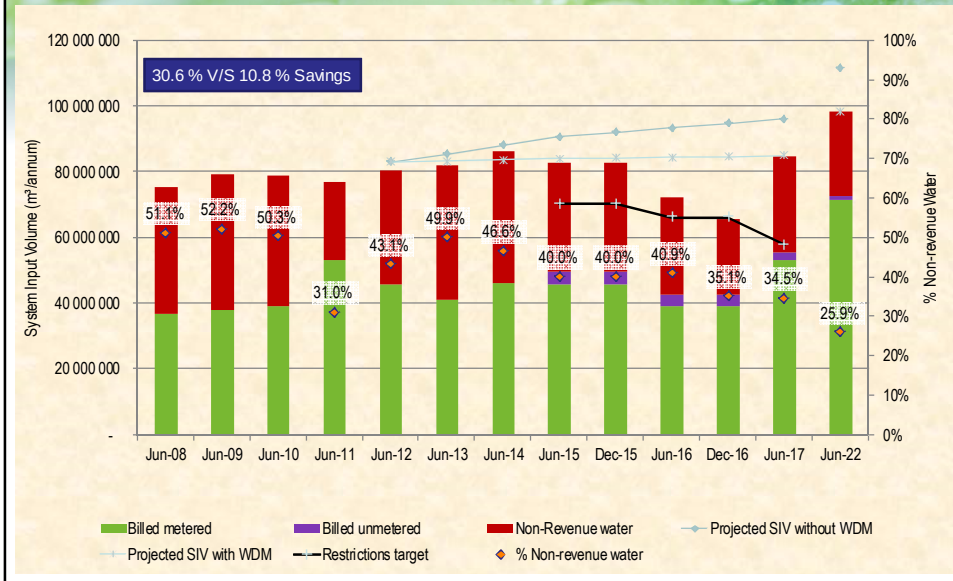
Algoa water supply system



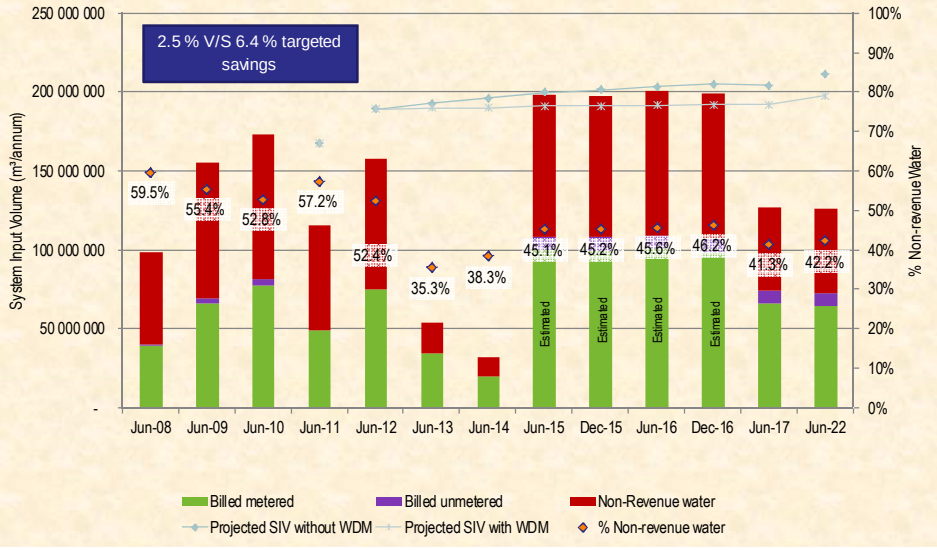
Amatole water supply system



Greater Bloemfontein water supply system



Olifants water supply system



Summary of targeted vs actual savings

System	Projected SIV without WDM (X) kl/annum	Projected SIV with WDM (Z) kl/annum	Projected % savings (X – Z) / X * 100	Actual demand (Y) kl/annum	Actual % savings (X - Y) / X * 100
IVRS	1 414 954 845	1 259 521 968	11.0%	1 374 064 291	2.9%
CWRWSS	81 896 986	72 505 548	11.5%	75 149 020	8.2%
KZNCMWSS	440 429 750	400 929 750	9.0%	399 750 304	9.2%
WCWSS	481 866 055	420 515 925	12.7%	363 416 316	24.6%
AWSS	131 372 286	95 678 395	27.2%	113 623 290	13.5%
AmWSS	66 893 713	61 493 713	7.2%	74 797 137	-0.6%
GBWSS	94 743 067	84 663 067	10.6%	65 780 175	30.6%
ORWSS	204 882 982	191 858 953	5.7%	199 681 021	1.1%
Total	2 917 039 684	2 587 167 319	11.3%	2 666 261 554	8.6%

Total targeted vs actual savings

Year ending	Projected SIV without WDM (X) kl/annum	Projected SIV with WDM (Z) kl/annum	Projected % savings (X – Z) / X * 100	Actual demand (Y) kl/annum	Actual % savings (X - Y) / X * 100
Jun-12	2 642 893 490	2 552 055 507	3.4%	2 493 478 837	5.7%
Jun-13	2 696 250 917	2 536 625 444	5.9%	2 450 960 227	9.1%
Jun-14	2 761 965 357	2 541 814 654	8.0%	2 465 754 174	10.7%
Jun-15	2 823 381 311	2 560 616 446	9.3%	2 764 067 385	2.1%
Dec-15	2 854 587 175	2 569 453 143	10.0%	2 797 835 573	2.0%
Jun-16	2 885 793 039	2 578 289 841	10.7%	2 743 414 339	5.0%
Dec-16	2 917 039 684	2 587 167 319	11.3%	2 666 261 554	8.6%
Jun-17	2 943 605 715	2 598 047 923	11.7%		
Jun-22	3 256 430 815	2 835 667 445	12.9%		

General challenges

Budget expenditure as at 31 Mar 2017

- Municipalities spent 61.3%, or R245.1 billion, of their total adjusted budgets of R400.2 billion. Unlikely to spend balance of R155.1 billion (up from R141.4 billion in March 2016)
- Municipalities spent 47.1%, or R33.1 billion, of their total adjusted capital budget (R70.3 billion) as at 31 March 2017. Unlikely to spend balance of R 37.2 billion (up from R 35.6 billion). Significant under performance.
- Metro water revenue billed was R18.8 billion against expenditure of R17.3 billion
- Municipal salaries and wages expenditure represents 27% or R92.4 billion of their total operational expenditure budget of R329.9 billion

Budget expenditure…

- Aggregated municipal consumer debt was R128.3 billion. Governments owe 5.1% or R6.6 billion and households 67.1% or R86.0 billion (up from R 66.9 billion)
- Realistically collectable amount (less than 90 days) is R24.1 billion (up from R22.9 billion)
- Municipalities owed their creditors R34 billion (up from R26.3 billion)
- Overall expenditure of conditional grants was 57.6% or R17.3 billion against the R29.8 billion transferred

Equitable Share (FBW) Allocation per Province

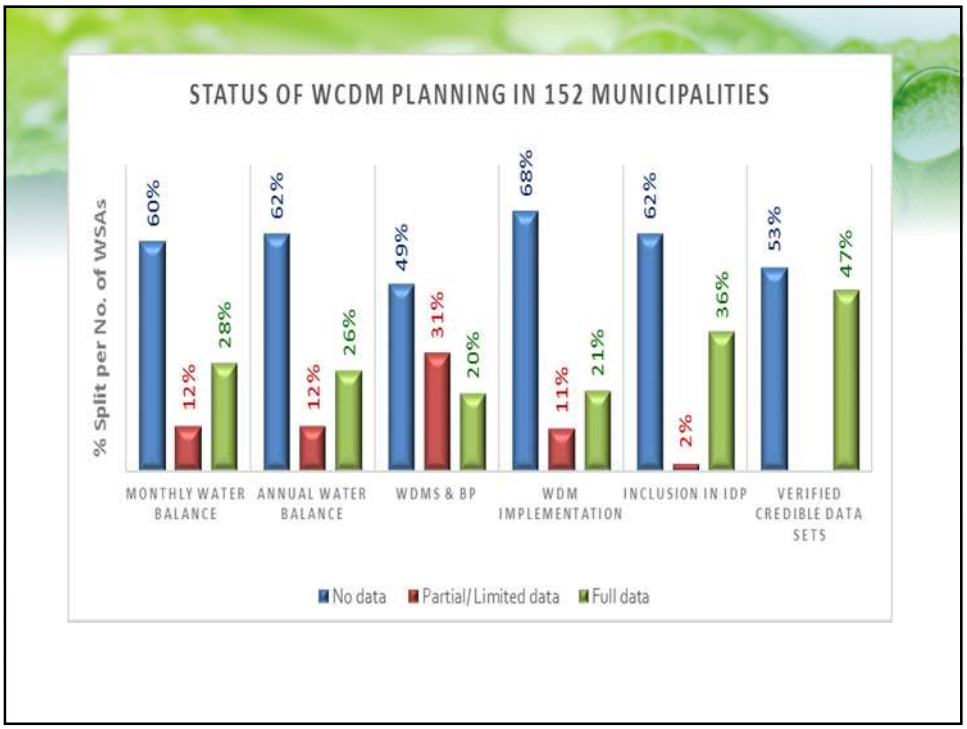
Province	Number of households	Number of indigent households (<R 2300pm)	% Indigent	Free basic water allocation (m^3/annum)	System Input volume (m^3/annum)	% billed consumption
EC	1 733 805	1 187 761	69%	85 518 788	332 151 376	26%
FS	845 236	523 800	62%	37 713 618	207 835 805	18%
GT	4 183 543	2 091 387	50%	150 579 894	1 473 100 700	10%
KZN	2 638 912	1 659 922	63%	119 514 360	697 751 184	17%
LP	1 488 967	1 052 087	71%	75 750 240	281 235 907	27%
MP	1 147 059	705 259	61%	50 778 622	270 990 713	19%
NC	315 069	177 888	56%	12 807 951	94 205 305	14%
NW	1 138 712	704 370	62%	50 714 638	206 496 825	25%
WC	1 746 785	798 324	46%	57 479 307	482 695 411	12%
Nat	**15 238 087**	**8 900 799**	**58%**	**640 857 418**	**4 046 463 225**	**16%**

Metering and billing challenges

Environment	Urban	Rural
Supply area	Formal – high LOS, house connections, continuous supply	Informal – low LOS, yard connections, standpipes, intermittent supply
Connections	Metered	Un/metered, informal
Meter reading	Monthly – manageable distances, continuous supply = accurate readings	Monthly – long distances, intermittent supply = inaccurate readings
Bylaws	Enforceable	Difficult to enforce
Tariffs	Usually considered affordable = cost effective	Unusually considered unaffordable = not cost effective
Billing	Easy to communicate & pay – post, e-mail, sms. Billing system easier to sustain	Difficult to communicate & pay – no post, e-mail. Billing system difficult to sustain
Demand control	Pays for service = Consumer awareness	Limited / no payment = Consumer apathy
Technology	Usually not restricted by costs, communications, skills,	Restricted by costs, communications, skills,

Funding Programmes…..

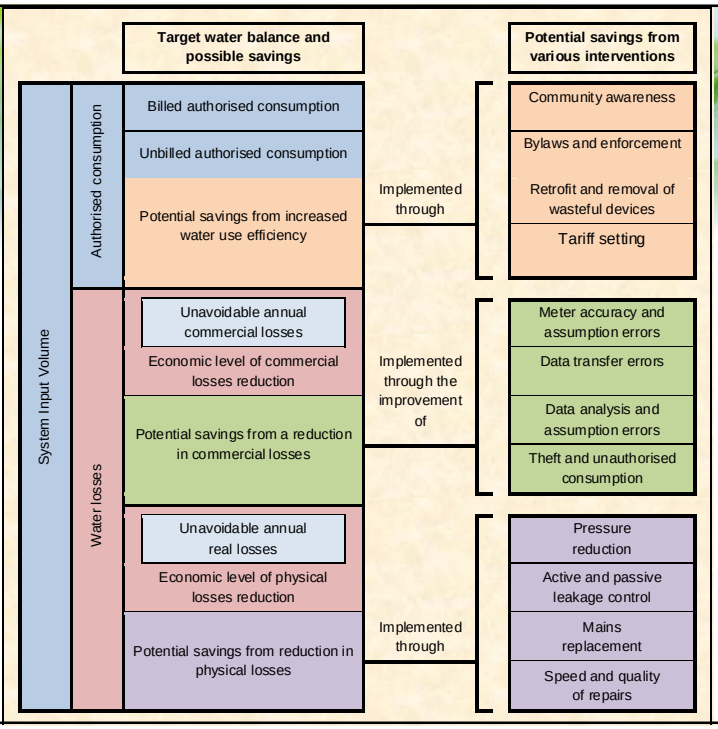
- **Budgets allocated towards new infrastructure projects through ACIP, MWIG,MIG etc,**
- **Management of these funds are fragmented with emphasis on new Infrastructure**



Lack of skilled personnel and capacity	Appoint and train suitable personnel on WC/WDM Current standard per municipal category? Standard: # Population requires: civil engineers /prof technologists, technicians, artisans = total technical team = 1 civil professional / ?? km pipeline	Skilled personnel on WC/WDM	SALGA, COGTA, DWS and Municipalities

None institutional prioritization of WC/WDM	Strategic prioritization of WC/WDM in the Municipalities	WC/WDM regarded as strategic priority in the Municipalities, incl in BP, PA, 2017-KPIs for MM

Alignment of the IWA water balance and interventions



Conclusions

- **The target v/s actual savings for 8 systems combined indicates a 8.6 % savings achieved by Dec 2016**
- **3.6 % improvement in savings from June 2016 to Dec 2016, which is encouraging**
- **Savings supported by water restrictions. Sustainability is a concern.**
- **WCWSS, KZNWSS and GBWSS have exceeded their targets**
- **Remaining systems are following the high population without WCWDM demand projections, inc IVRS**
- **Almost all Municipalities in the IVRS are cat A, B1 and B2, they should be able to prioritize and implement WCWDM**
- **WCWDM requires and integrated approach for sustainability**

It's not about being the best
It's about being
better than
yesterday

Thank YOU