



**2019 8th REGIONAL
african water
LEAKAGE SUMMIT**

DBSA Vulindlela Auditorium, Midrand, Gauteng,
South Africa, 28 - 29 August 2019

The socio economic benefits of reducing non-revenue water

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Participating and supporting organisations :



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Parliamentary committee welcomes War on Leaks rethink

OPINION / 19 FEBRUARY 2019, 8:33PM / LETTER

Mlungisi Johnson
Chairperson of the portfolio committee on water and sanitation








File photo: African News Agency (ANA)

The Portfolio on Water and Sanitation welcomes the announcement by the Department of Water and Sanitation of its commitment to rethink the model of the War on Leaks programme to ensure optimum benefit is derived from the programme.

The committee has always raised concern about the effectiveness of the programme, which has to date cost the taxpayer more than R2.6 billion without tangible impact on non-revenue water that is being lost in the value chain.

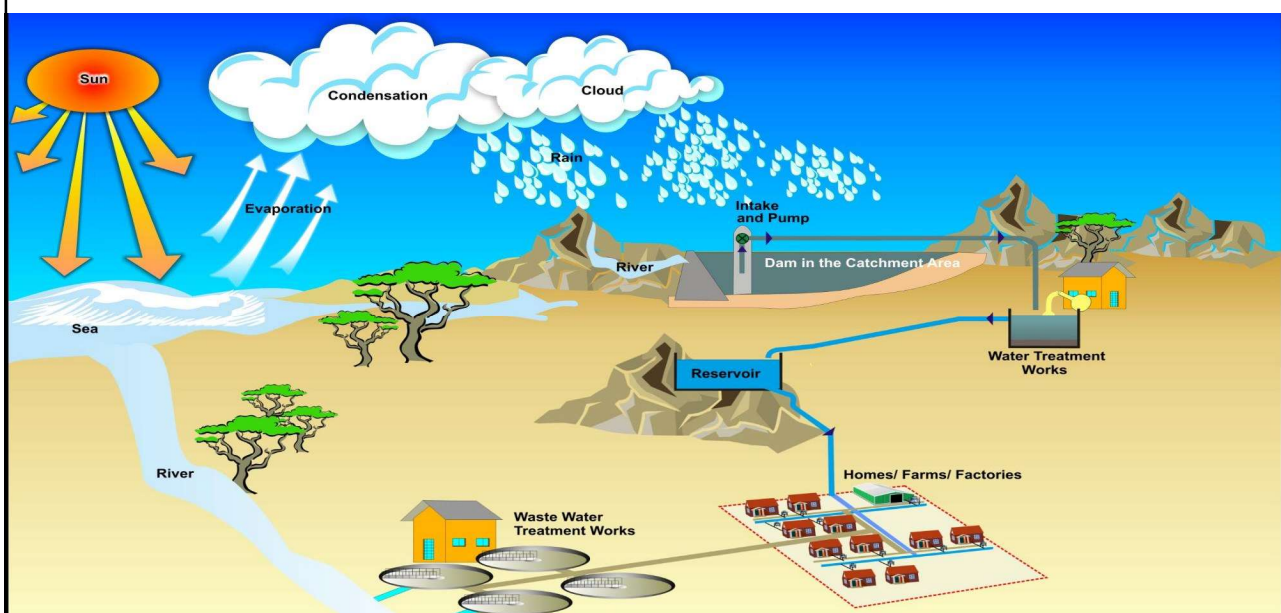
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Objective

Demonstrate how does investment into water supply, including NRW, translate into economic growth, job creation and social benefits?

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Water services cycle



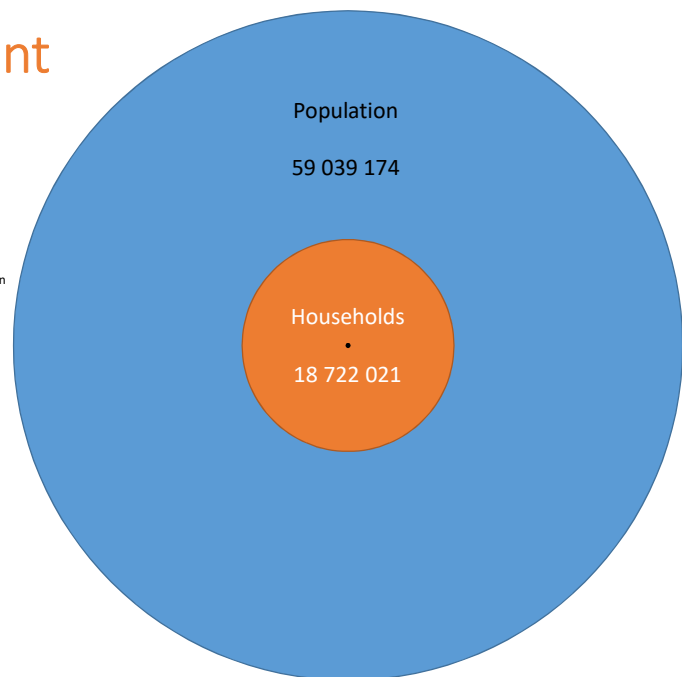
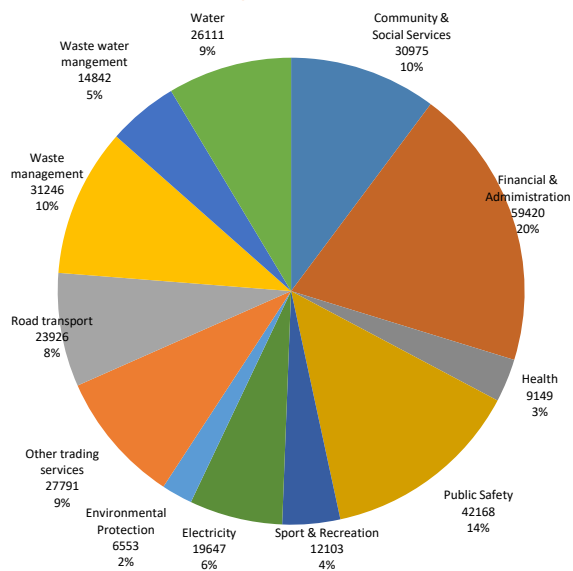
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Benefits of saving water...

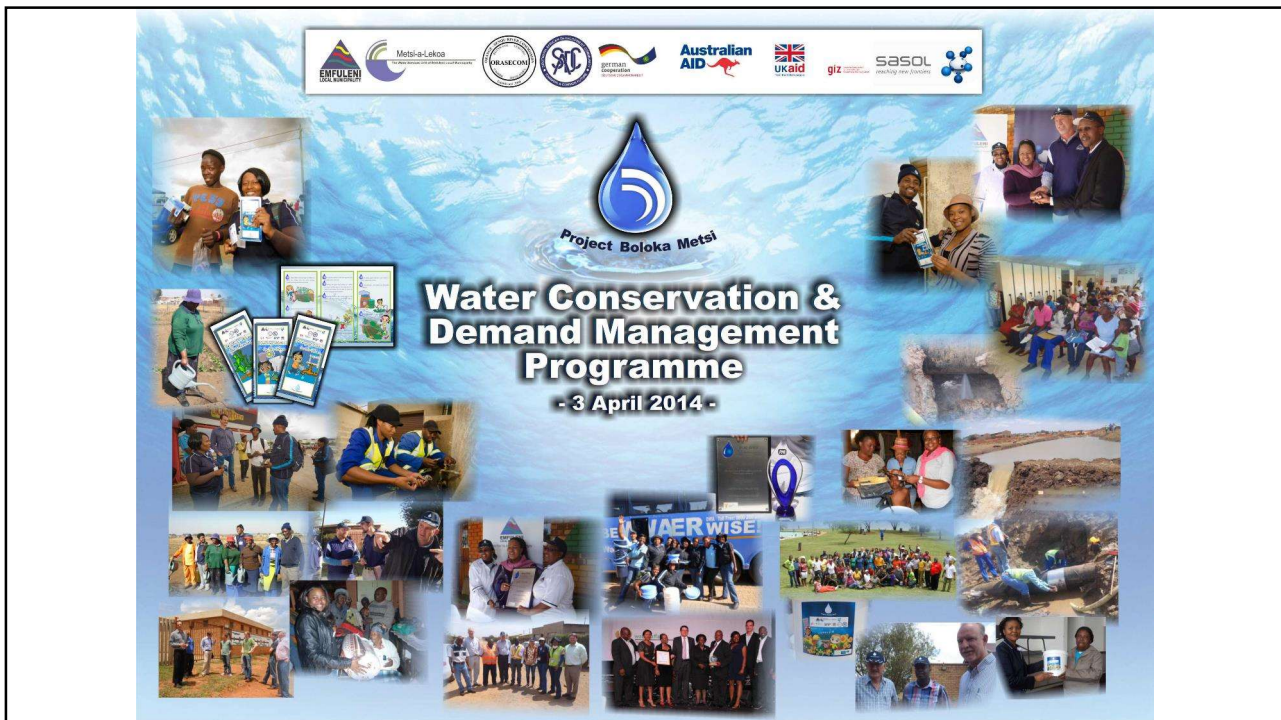
	Water resources - Deferred resource (dams) development - Increased ecological reserve - Reduced environmental impact	- Improved water security - Improved local resource utilisation - Climate change mitigation and adaptation
	Water treatment - Deferred plant upgrades - Reduced operations and maintenance costs	- Reduced plant capacity requirements - Climate change mitigation and adaptation
	Water distribution - Deferred network upgrades - Improved level of service - Job creation, social and economic development - Social learning and an informed community - Sustainable municipality and water services	- Improved efficiency - Reduced water losses and NRW - Reduced operations and maintenance costs - Climate change mitigation and adaptation
	- Deferred plant upgrades - Improved concentrations and plant operations	- Reduced operations and maintenance cost - Reduced load on the plant
	Return flows - Reduced return flows - Possibilities for reuse and recycle	Reduced environmental impact

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Municipal environment



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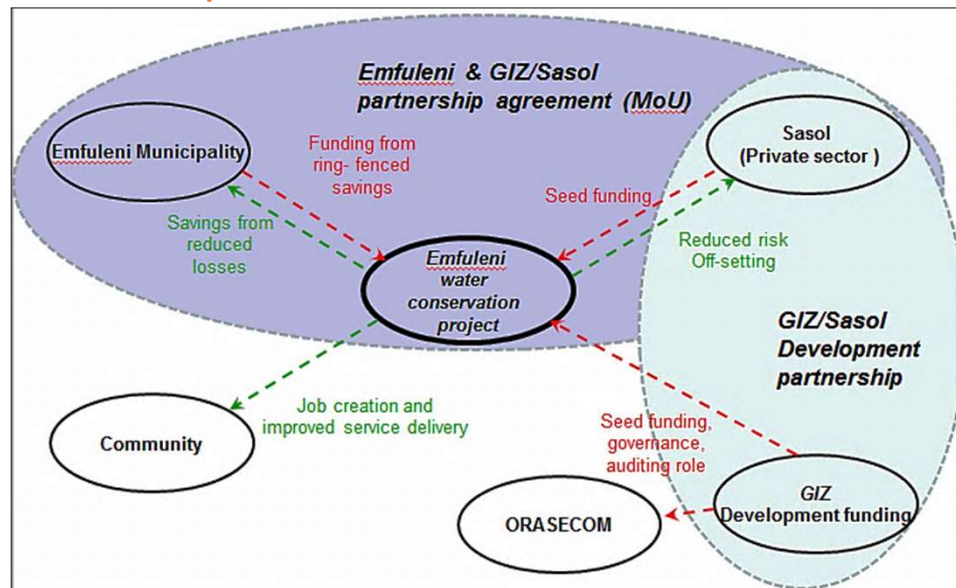
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Emfuleni Local Municipality (2012)

- ◆ Largest local municipality in SA with a population of 721 000 (Census 2011)
- ◆ Unemployment rate = 34.7%
- ◆ Total water purchases = 93 million m³/a @ cost of R 536 million (2012/13)
- ◆ NRW / Water losses = 48%
- ◆ Cost recovery <5% in certain areas
- ◆ Average consumption = 350 litres / capita / day
- ◆ Major contributor to Project 15% in the Integrated Vaal River System

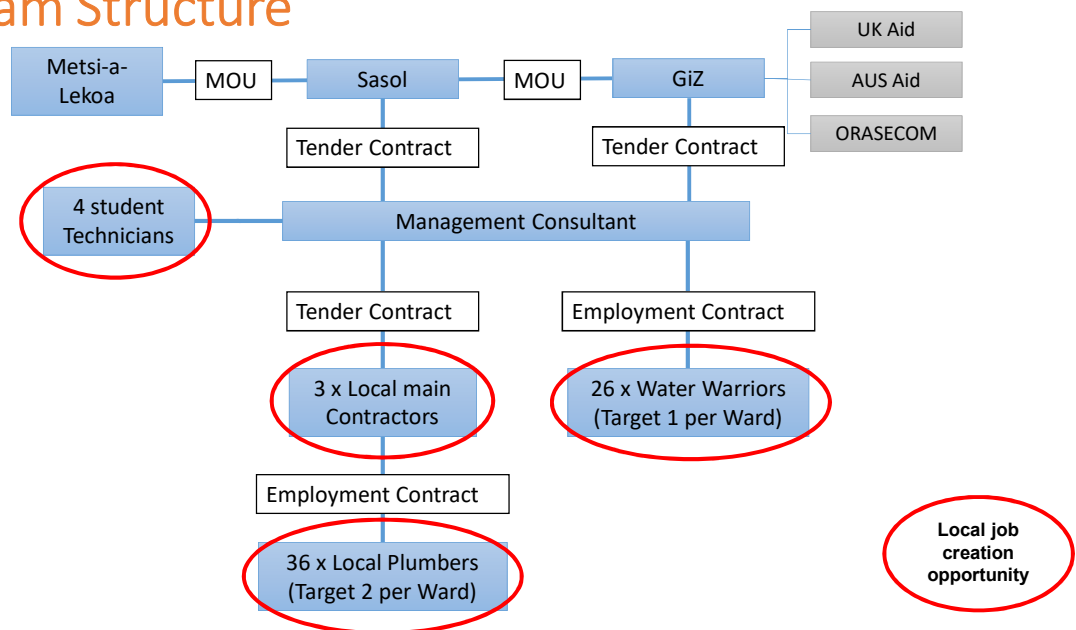
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Stewardship model



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Team Structure



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FROM.....

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Photo taken from: Alertnet, Fidelis Zvomuya, 24 October 2011.

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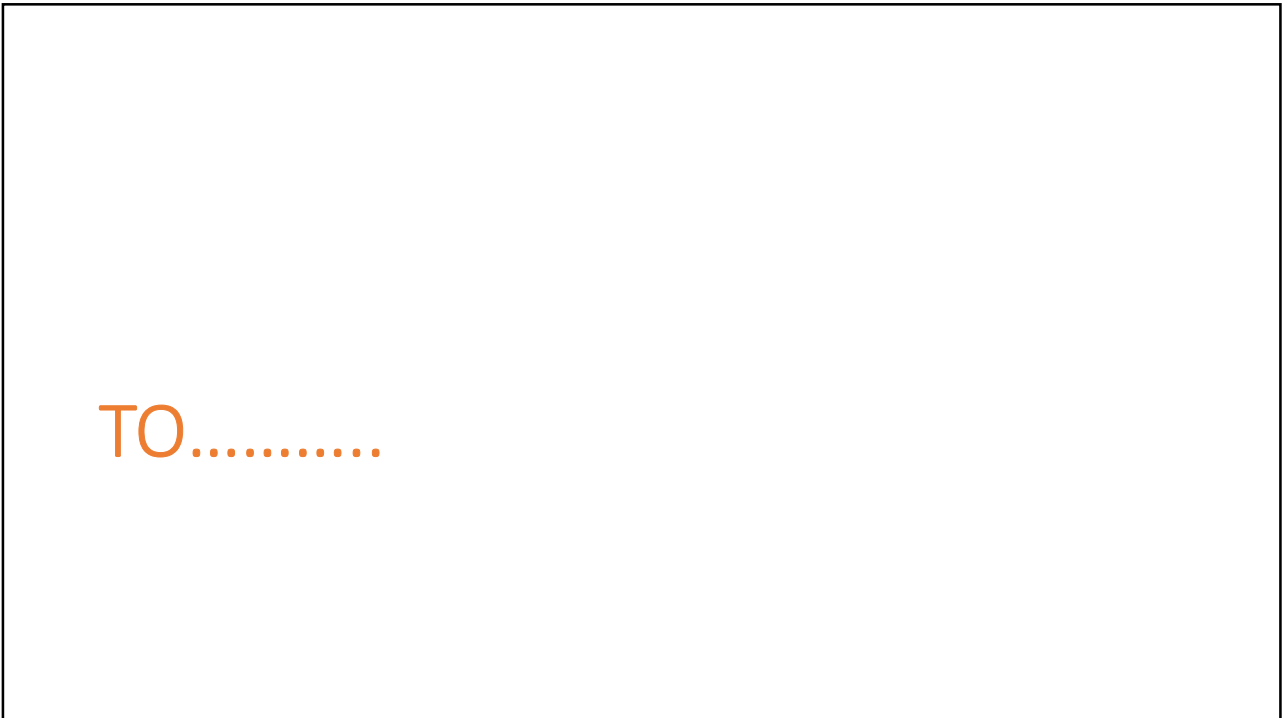
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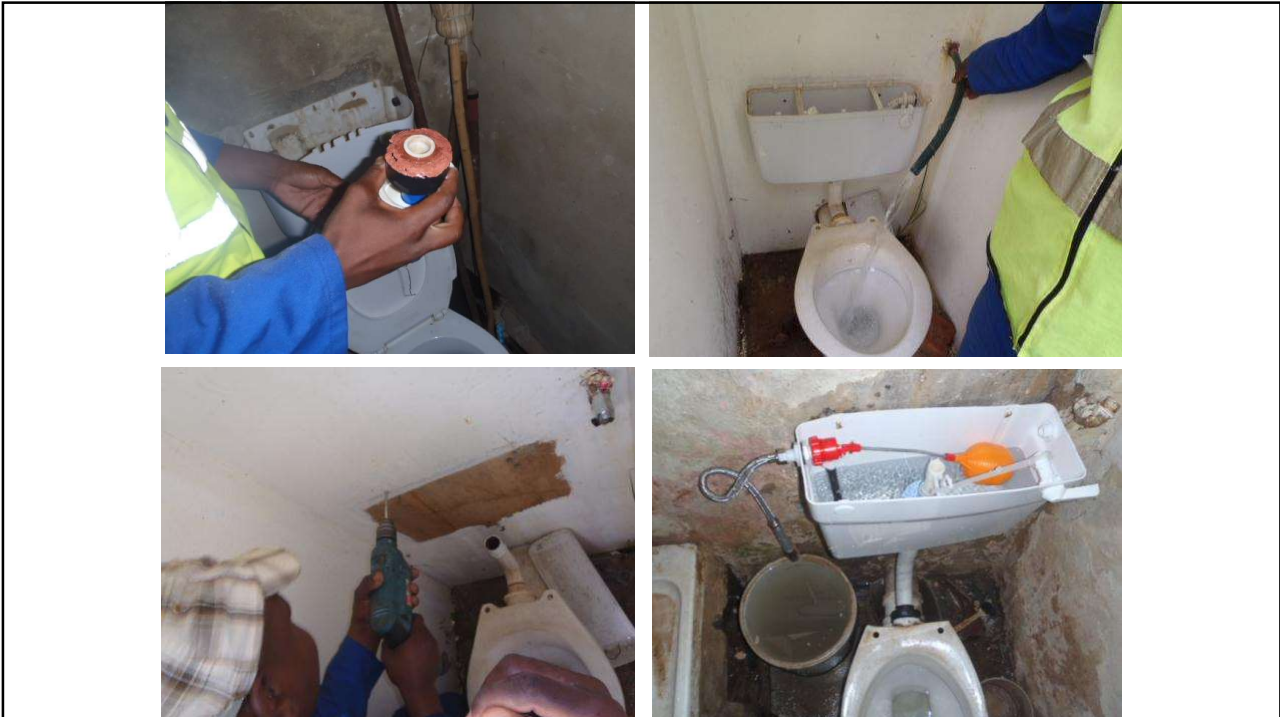
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Up skill contractors and plumbers



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Total Jobs Created

Labour	Male	Female	Total
Engineering Technicians	6	1	7
Admin Support	0	1	1
Water Warrior Coordinator	1	1	2
Water Warriors	9	16	25
Local Ward Plumbers	37	21	58
Local Contractors' Team	33	7	40
Management Consultant	8	4	12
Total	94	51	145

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Project team



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Plumber Training

Position	Phase 1			Phase 2		
	08 April – 26 April 2013			19 May – 28 May 2014		
	Male	Female	Total	Male	Female	Total
Local Plumbers	22	8	30	7	11	18
Water Conservation Warriors	6	9	15	2	8	10
Student Trainee Technicians	3	0	3	2	1	3
Total	31	17	48	11	20	31

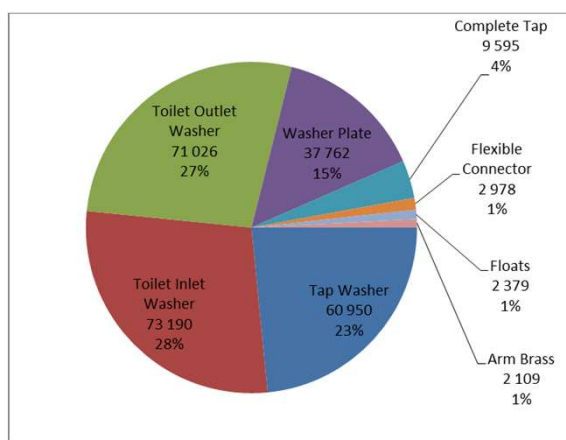
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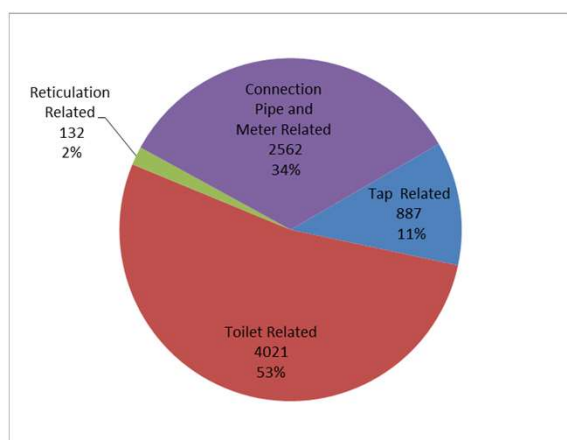
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Summary of plumbing material

Scheduled Material



Additional Work



242 928 washers replaced!!!

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Project Cost (2014)

Unit	Social component	Technical component	Project total
Phase 1	R 5 153 000	R 7 012 000	R 12 166 000
Phase 2	R 3 290 000	R 11 229 000	R 14 518 000
Total	R 8 447 000	R 18 241 000	R 26 688 000
% of budget	32%	68%	100%
Cost / household (106 092)	R 80	R 172	R 252
Cost / stand (73 766)	R 114	R 247	R 362
Cost / person (368 034)	R 23	R 50	R 73

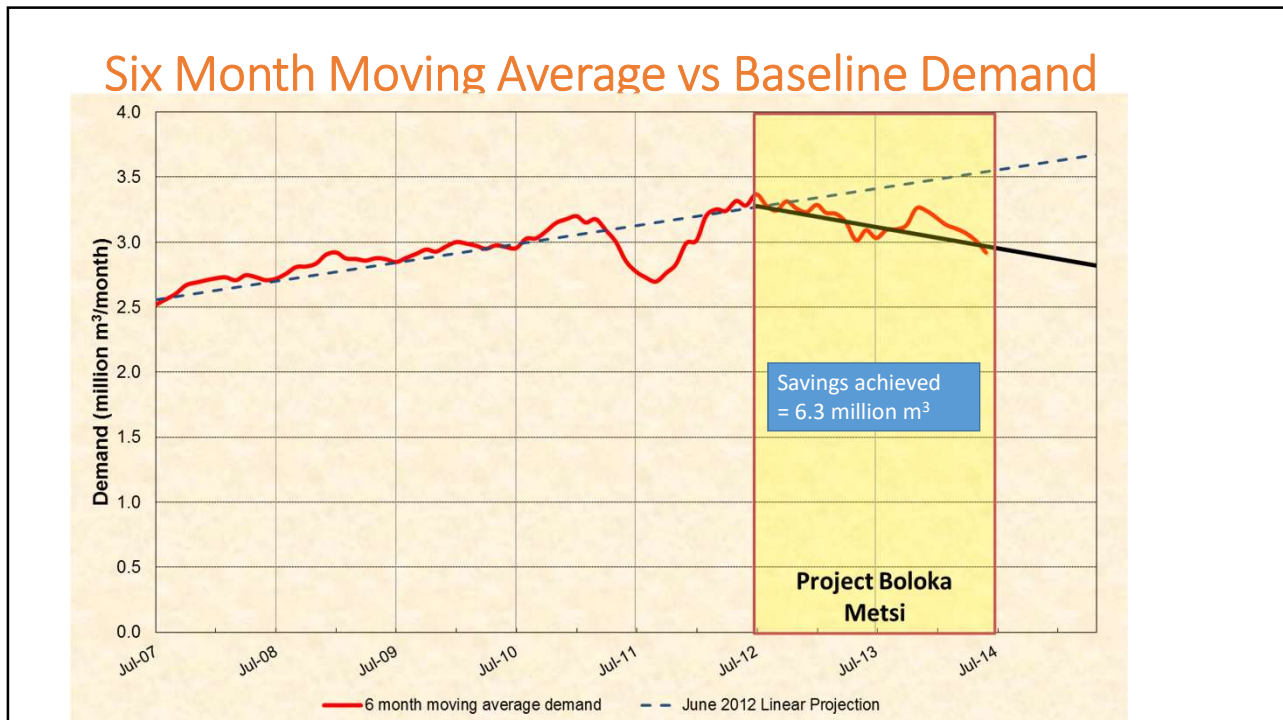
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Local Content

- ◆ All WCWs and local plumbers were recruited from wards in Sebokeng and Evaton
- ◆ All three main contractors had offices in Emfuleni
- ◆ Construction materials were bought from local suppliers
- ◆ Local contractors and suppliers were approached for printing and coping, catering, chairs, tents, sound equipment and tables used during awareness campaigns

Item	Description	% of project
Professional fees	All local salaries, WCWs and support	18%
Construction cost	Three main contractors	40%
Disbursements	Catering, printing, awareness material	2%
Total		60%

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Ekurhuleni metropolitan municipality

- ◆ Population = 3 379 104 Households = 1 299 490
- ◆ Annual water demand = 341. 5 million m³/annum (2017)
- ◆ % Non-revenue water = 33.6% (2017)
- ◆ Metro with largest number of wet industries – Distell, Nestle, Kellogg's, Sappi, SAB, McCain Foods, Ergo, Alpha Cement, Cobra Water, etc.
- ◆ Approximately 20% of customers use 80% of water supplied
- ◆ Started top consumer metering programme in 2008
- ◆ Water security and costs important to businesses

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FROM.....

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TO.....

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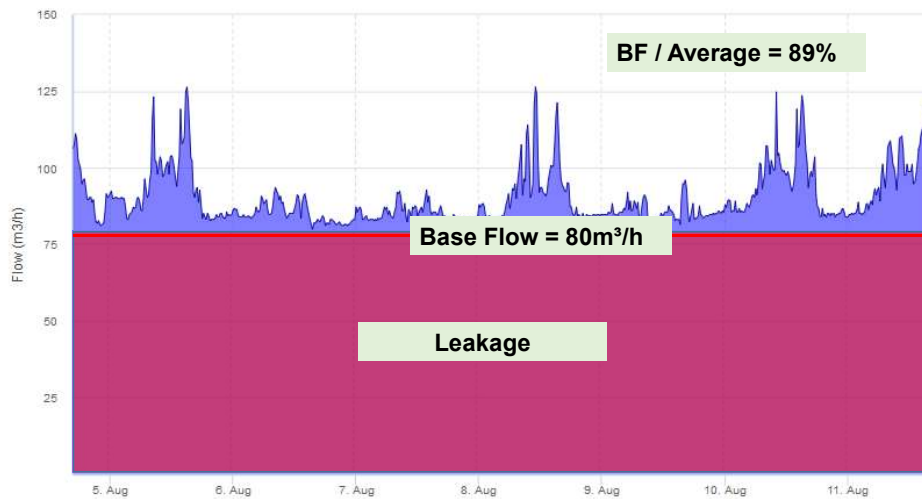


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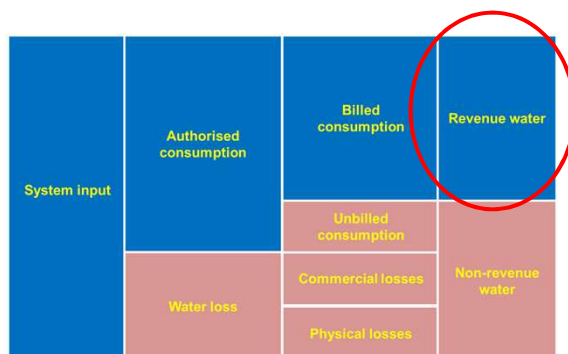
Logging Results



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Large Consumer - Leakage Analysis

- ◆ Leakage = 1 920m³/day
- ◆ Leakage = 58 400m³/month
- ◆ Leakage = 700 800m³ / year



Hely Hutchinson dam

21 July 2013

Wilma Grebe

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Benefits of accurate metering and billing

Municipality

- ◆ Customers billed based on actual consumption
- ◆ Increased revenue from accurate metering and unmetered connections
- ◆ Potential reduced income from awareness

Customer

- ◆ Large industries know how much water they are using and appreciate accurate billing
- ◆ Increased awareness resolves inefficiencies and water losses
- ◆ Increased water security

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Project Somarela Thothi

Management of Greater Gaborone's
worst drought in 30 years

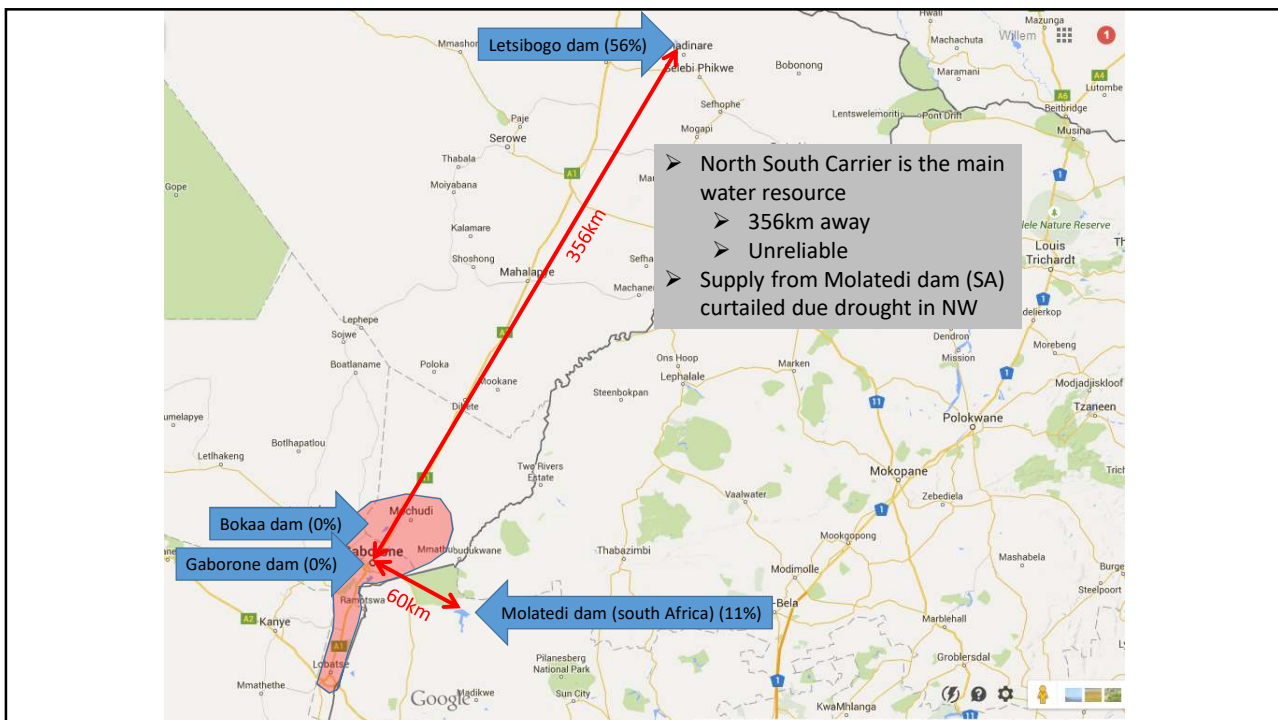


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Project area characteristics

- ◆ Water supply to approximately 560 000 people (>25% of Botswana population)
- ◆ Experience worst drought since 1983
- ◆ Water rationing introduced in April 2013
- ◆ 2012/13 Annual demand without rationing = 3.6 million m³/annum
- ◆ 2014/15 Annual demand with rationing = 2.4 million m³/annum
- ◆ Severe load shedding – unable to operate water treatment plants and pumps

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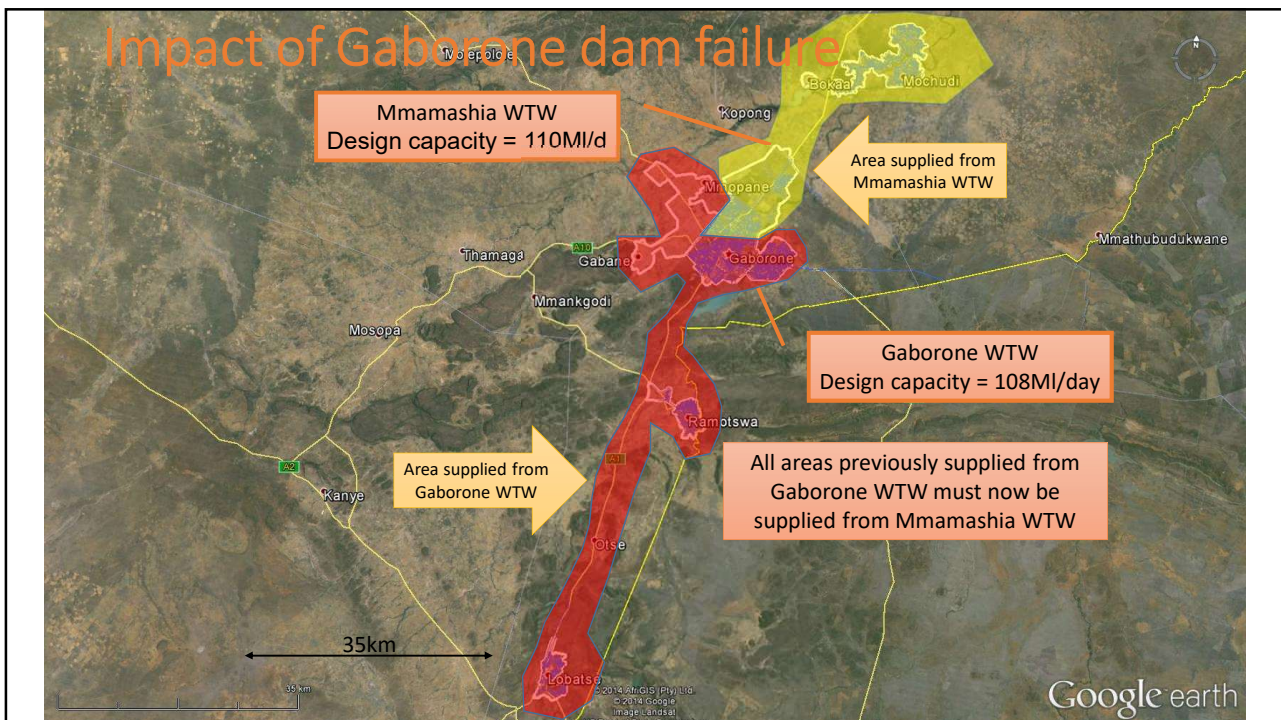
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Impact of the drought...

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Interventions...

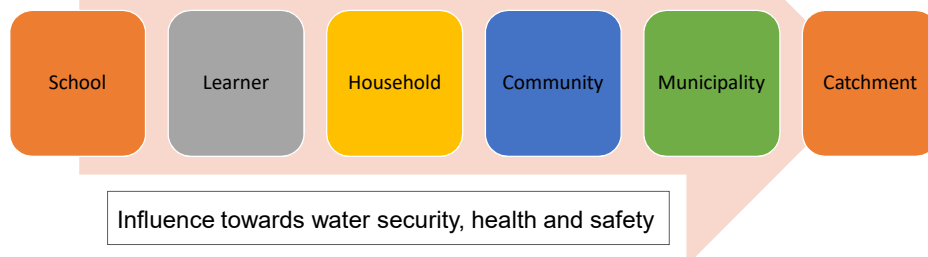
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Schools awareness campaigns



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Schools awareness campaigns



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Outreach activities



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Leak detection and repair



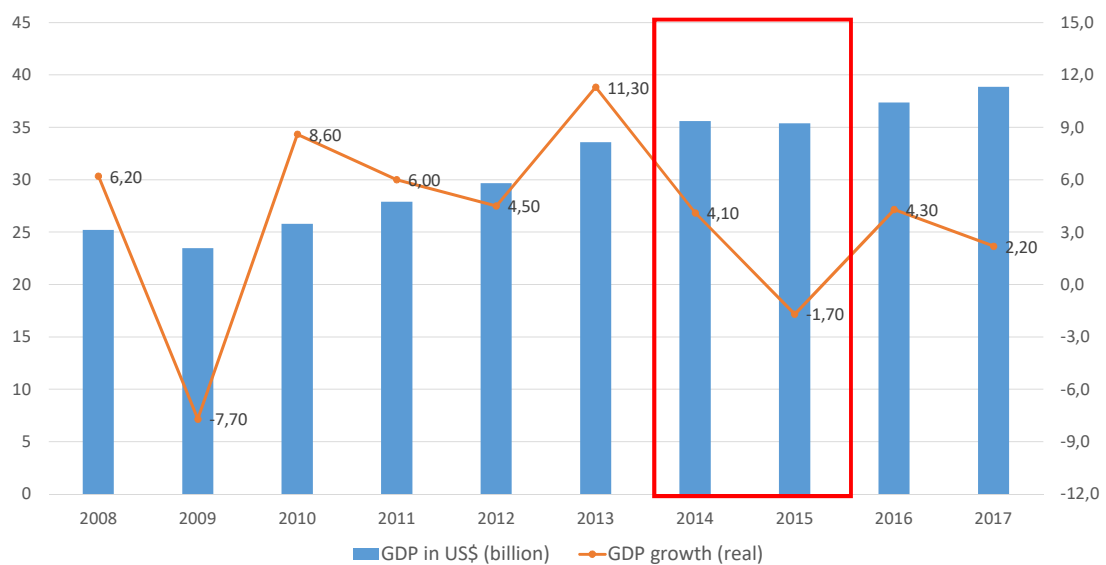
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Training and capacity building



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Drought and electricity woes on the economy



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Project outcomes

- ◆ Reaching “Day zero” should at all costs be avoided
- ◆ The drought had a significant impact on the economy
- ◆ Failure of the Gaborone Dam had a significant impact on the water supply services
- ◆ Public safety and health were severely impacted
- ◆ The training and capacity building enabled the WUC to continue water conservation and water demand management activities - sustainable

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Conclusions

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Case study outcomes

- ◆ Job creation, social and economic development
- ◆ Sustainable interventions (Ekurhuleni & Botswana)
- ◆ Social learning and an informed community
- ◆ Sustainable municipality and water services
- ◆ Improved level of service
- ◆ Improved efficiency
- ◆ Reduced water losses and NRW
- ◆ Climate change mitigation and adaptation
- ◆ Socio economic benefits could outweigh volume water saved

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Local social and economic opportunities

- ◆ Asset management, maintenance and cleaning
- ◆ Household leak repairs
- ◆ Meter audits
- ◆ Community awareness
- ◆ Supply PPE, materials and equipment
- ◆ Up skill contractors and plumbers
- ◆ Experiential training for technical staff
- ◆ Communities can do more to save water than all municipal staff put together

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THANK YOU

