CLOTHING TEXTILES RETAIL

CCTC
CAPE CLOTHING AND TEXTILE CLUSTER

GreenCape
Supporting the business of green

WC WATER CRISIS:
INDUSTRY SUPPORT ROUNDTABLE

21 FEBRUARY 2018
09H00 - 12H00
GREENCAPE

Workshop Agenda

Time	Activity	Facilitator
09:00 - 09:10	Welcome and introduction	BMA
09:10 - 09:20	Update on the current state of the WC water crisis	GreenCape
09:20 - 09:35	Sustainable water management & focus areas for businesses: short – long term	GreenCape
09:35 - 09:50	Drought support services available to industry	GreenCape
09:50 - 10:50	Practical solutions implemented in the WC - GreenCape success stories - ACA Threads	GreenCape & Guest speakers from ACA Threads
10:50 - 11:00	Tea break	
11:00 - 12:00	Roundtable discussion	BMA

Managing water risk

in the WC clothing and textiles sector

GreenCape

21 February 2018

Industry Support Roundtable

In partnership with

CCTC
CAPE CLOTHING AND TEXTILE CLUSTER

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

Western Cape Government
Economic Development and Tourism

What do we do at GreenCape?

We support businesses and investors in the green economy to remove barriers to establishment and growth. We also support local, provincial and national government to build a resilient green economy.

Waste

Water

Renewable energy

Energy efficiency

Industrial symbiosis

Sustainable agriculture

Atlantis SEZ

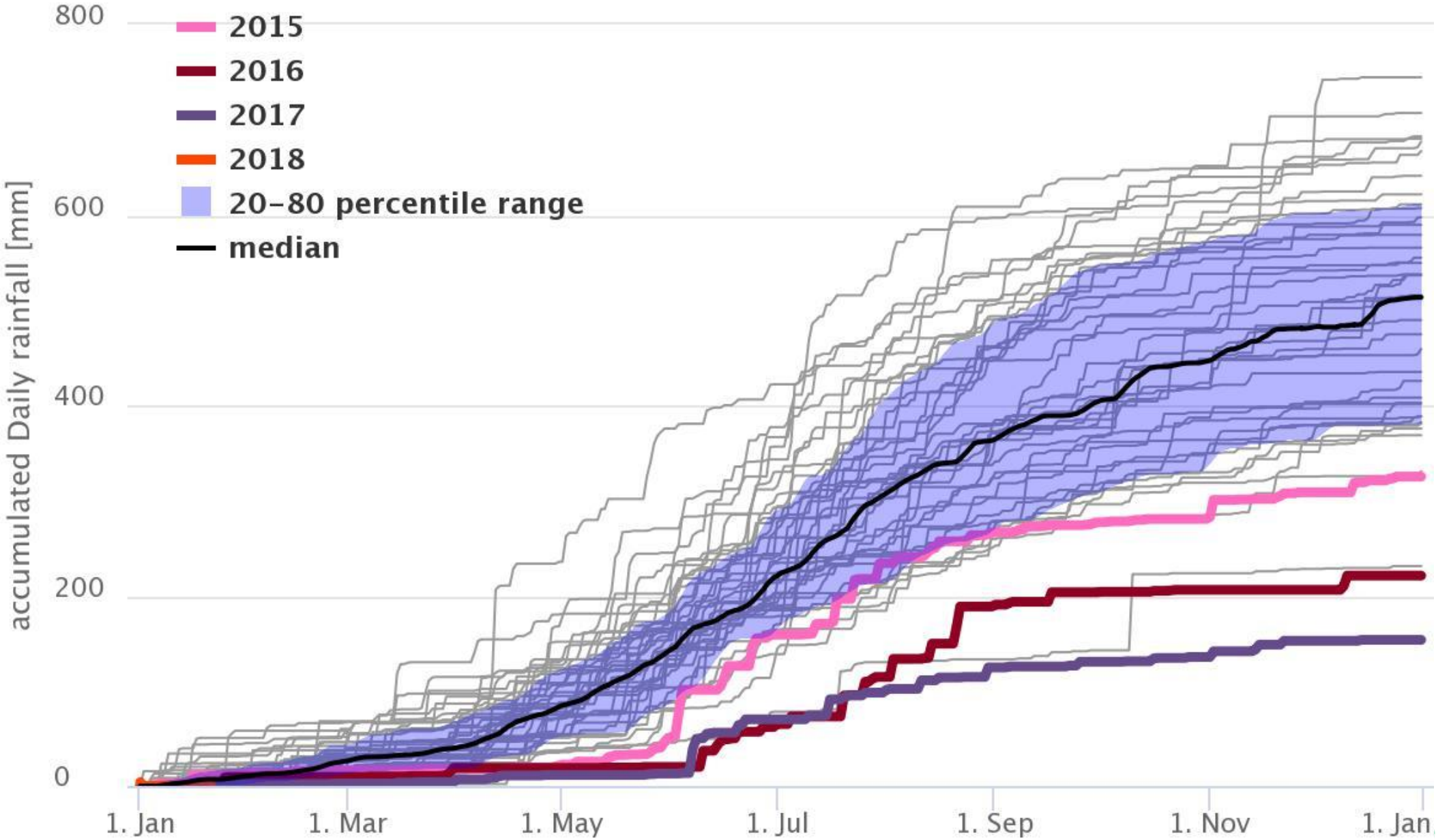
Gas

Green finance

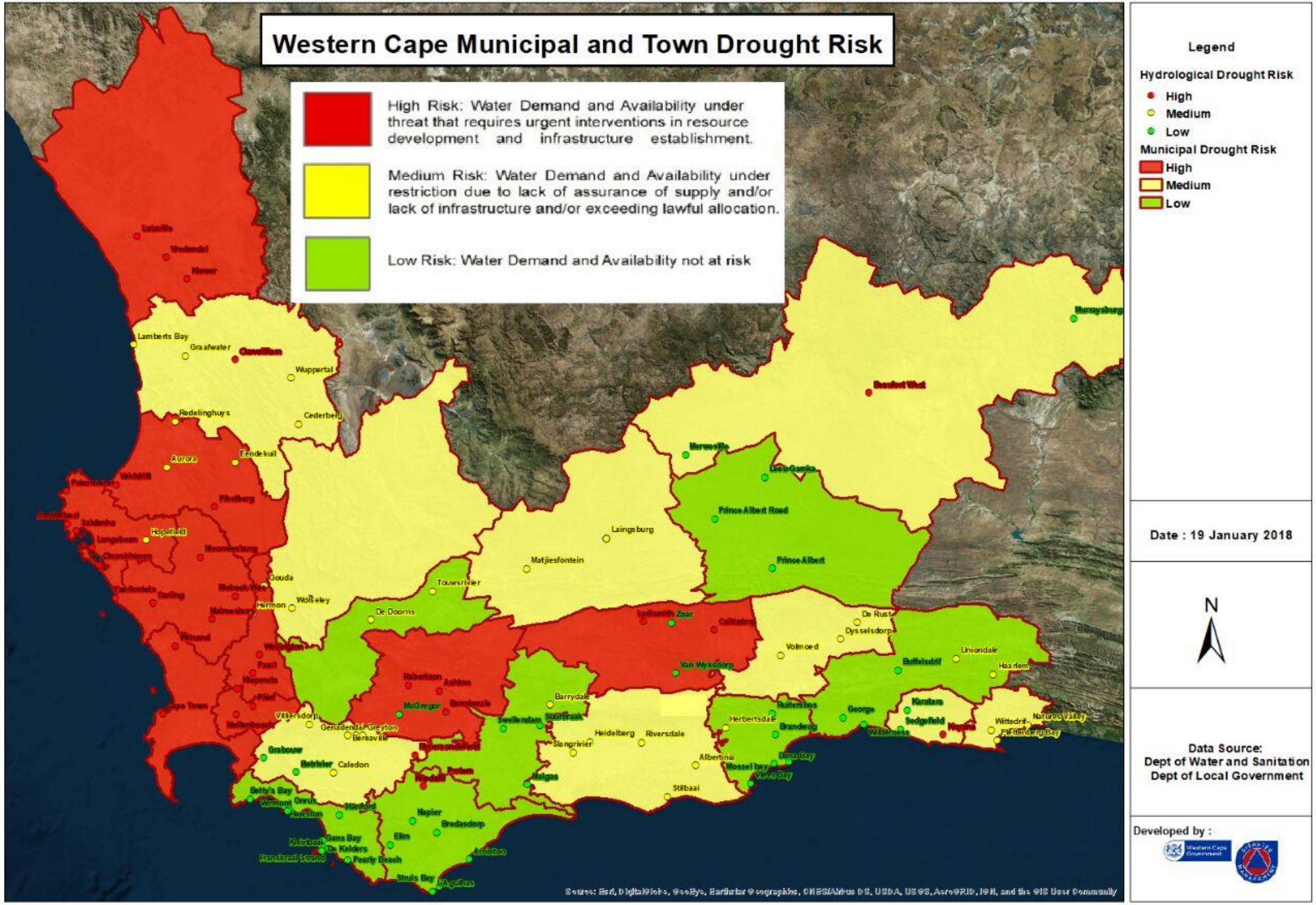
Bioeconomy

Update on the WC water crisis

Accumulated daily rainfall at Cape Town Airport



Data: SAWS through GSOD, Figure: © Climate System Analysis Group, University of Cape Town



Source: Western Cape Government, January 2018

Latest Cape Town dam levels

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City of Cape Town: Water Dashboard

20 February 2018

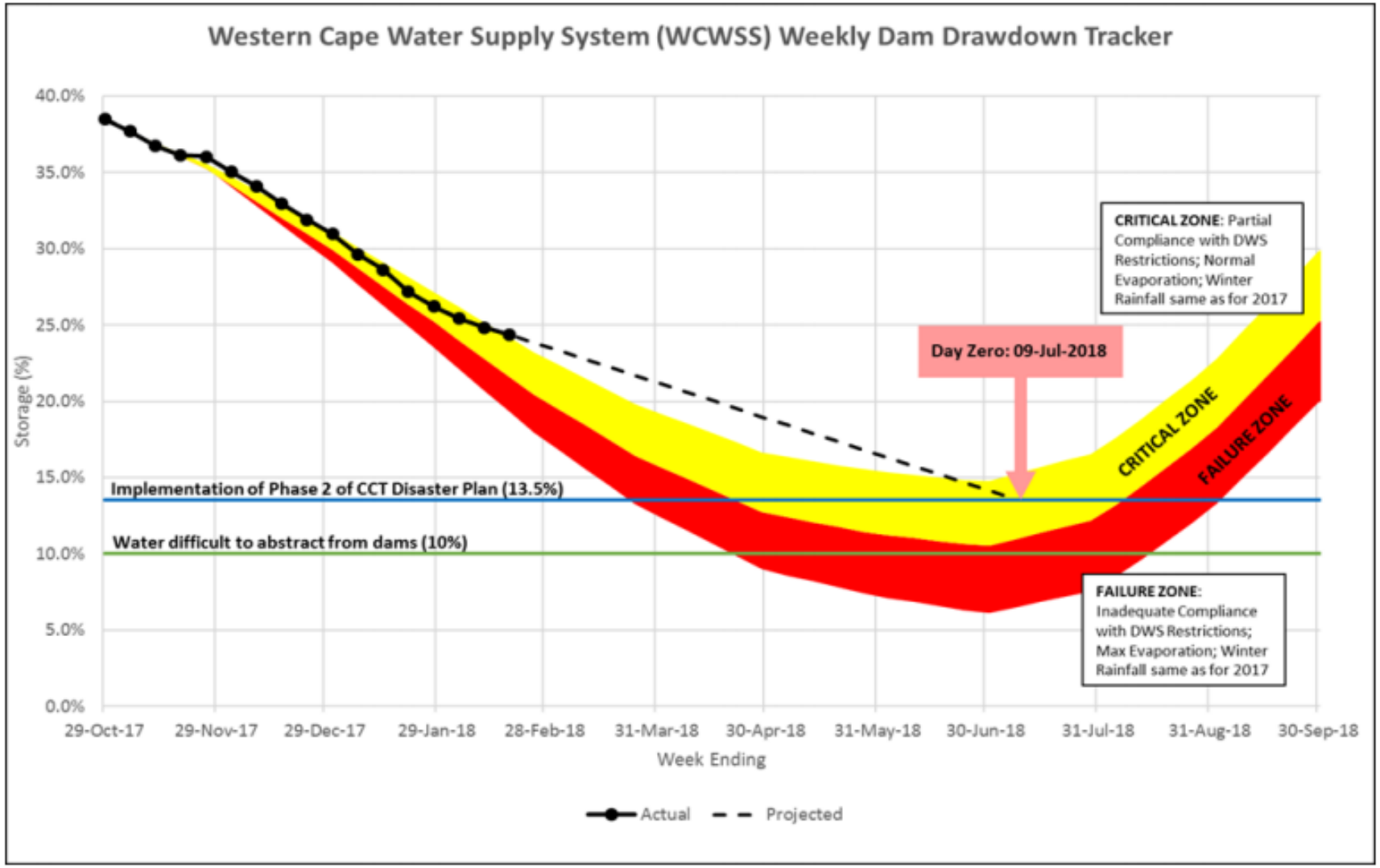
DAM STORAGE (%)	WEEKLY DAM LEVEL CHANGE (%)	AVG DAILY PRODUCTION ALL WATER SOURCES (Ml/d)	AVG DAILY PRODUCTION WCWSS LARGE DAMS ONLY (Ml/d)
24.4	-0.4 ⬇ decrease since last week	519 (Target 450Ml/d)	500

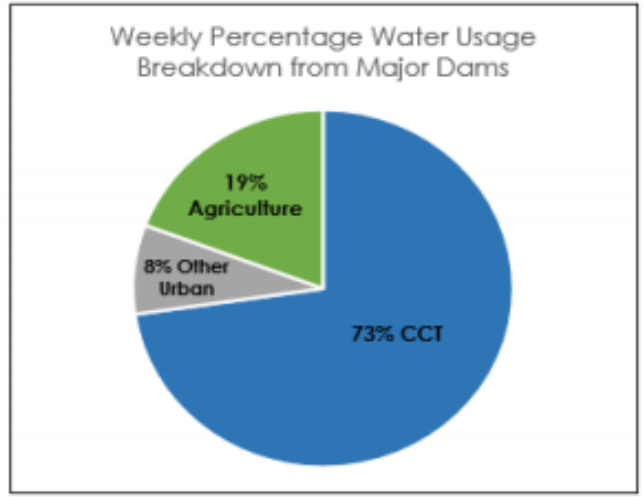
Water Usage From Large Dams Comprising The Western Cape Water Supply System (WCWSS)

https://resource.capetown.gov.za/documentcentre/Documents/City%20research%20reports%20and%20review/damlevels.pdf

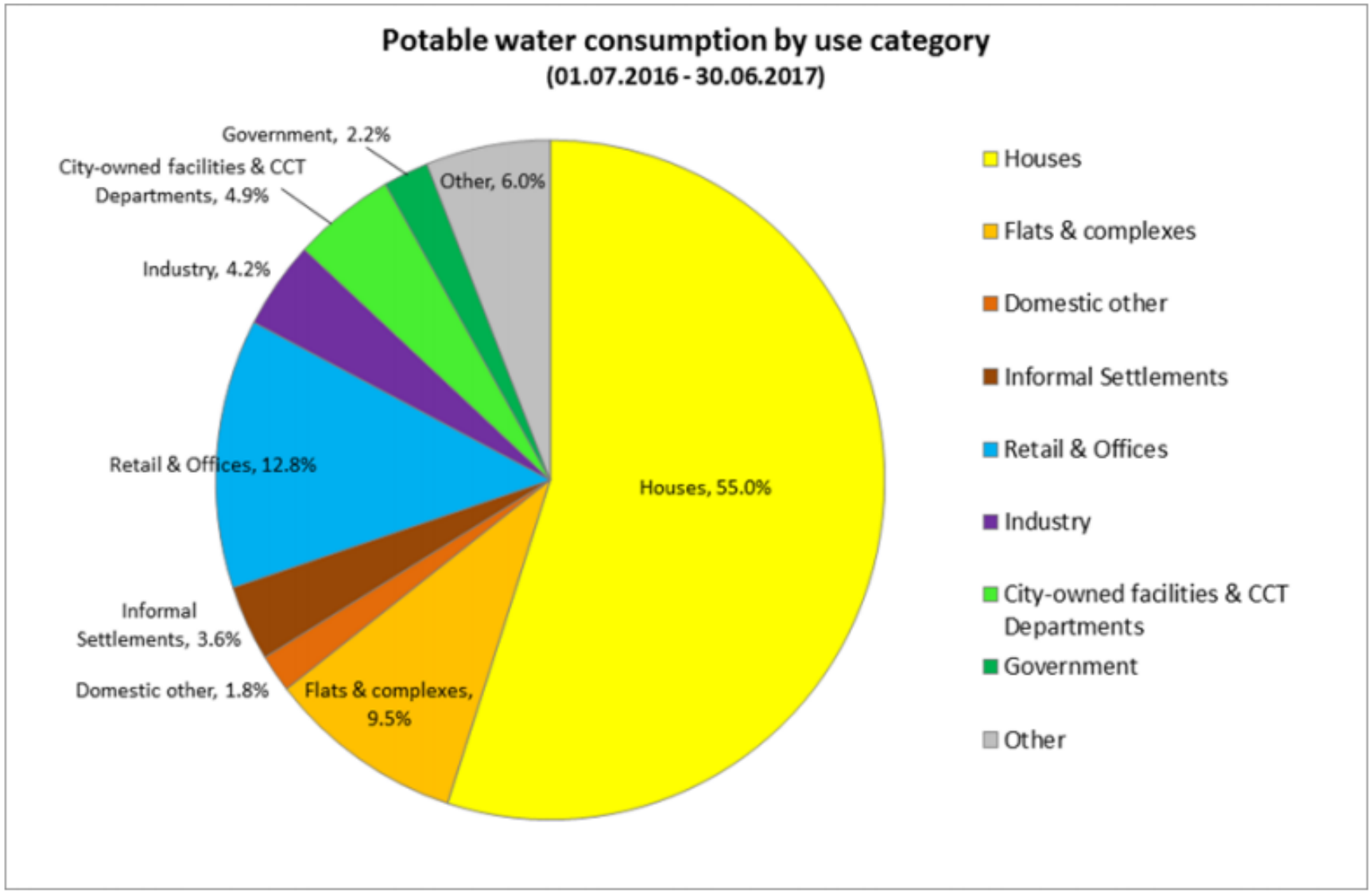
Day Zero

Western Cape Water Supply System (WCWSS) Weekly Dam Drawdown Tracker





Cape Town Use by Category



Restrictions

- City of Cape Town Level 6 restrictions requires all non-residential users to reduce their water consumption by 45% in comparison to pre-drought (2015) usage
  - Quota increases can be applied for: evidence of pre-2015 reductions and international benchmarks
- This also applies to groundwater usage (in comparison to historical average between 2010 – 2015)
- Level 6b tariffs:

Commercial / Industrial Tariffs		
Water Steps (1kl = 1 000 litres)	**Level 4 (2017/18)** Until 31/1/2018 **Rands (incl VAT)**	**Level 6 (2017/18)** From 1/2/2018 **Rands (incl VAT)**
Water	R27, 97	R57
Sanitation (standard)	R21, 50	R44, 18

Sustainable water management in the clothing and textiles sector

What can businesses do?

- Appoint task team
- Water audits
- Meter and monitor, (incl. leak detection)
- Water quality requirements (fit-for-purpose)

Step 1: Understand water risks and uses

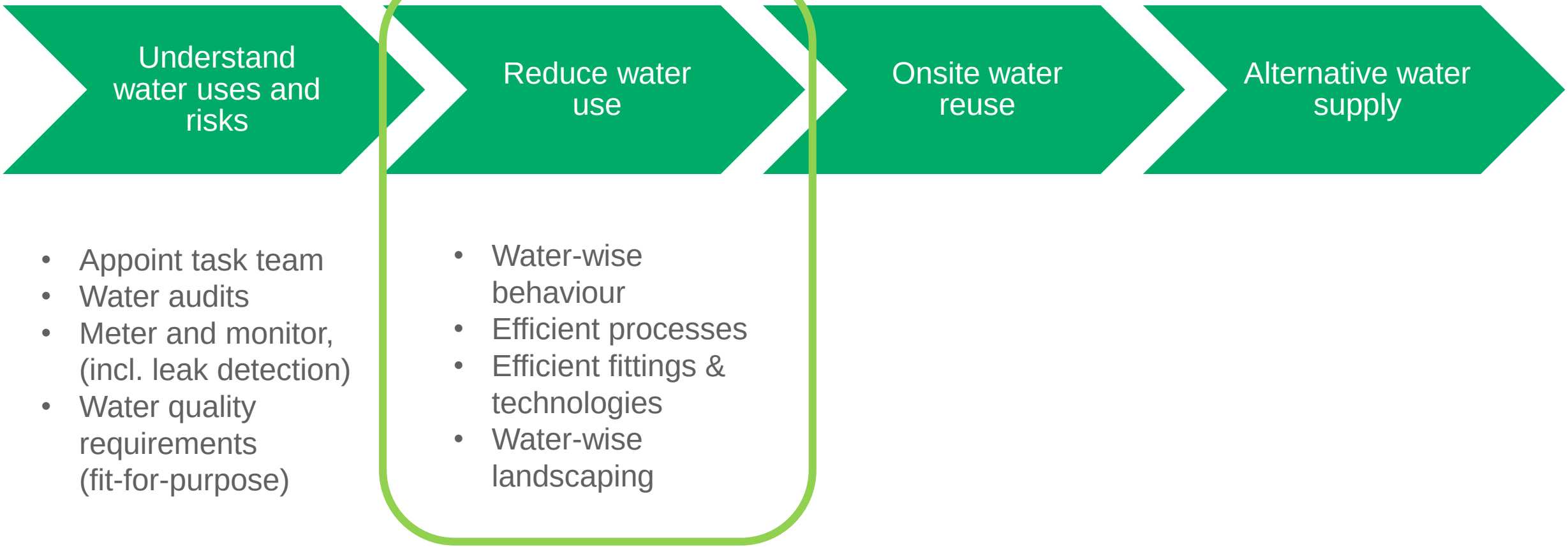
- High losses in process heat distribution systems (e.g. steam leaks, lost condensate return) common in textiles industry
- Most textile companies meter the main line coming into the process with very little sub-metering or internal benchmarking
- Leakages and losses often account for 10% of facility's water consumption

(Source: NCPC)

Opportunities:

- Water audits (NCPC offers free service)
- Smart metering:
  - Online near real-time monitoring of meters
  - Enable better management of water and leak detection
  - Can lead to significant savings
- Leak detection and repair part of maintenance programme
- Industry benchmarking

What can businesses do?



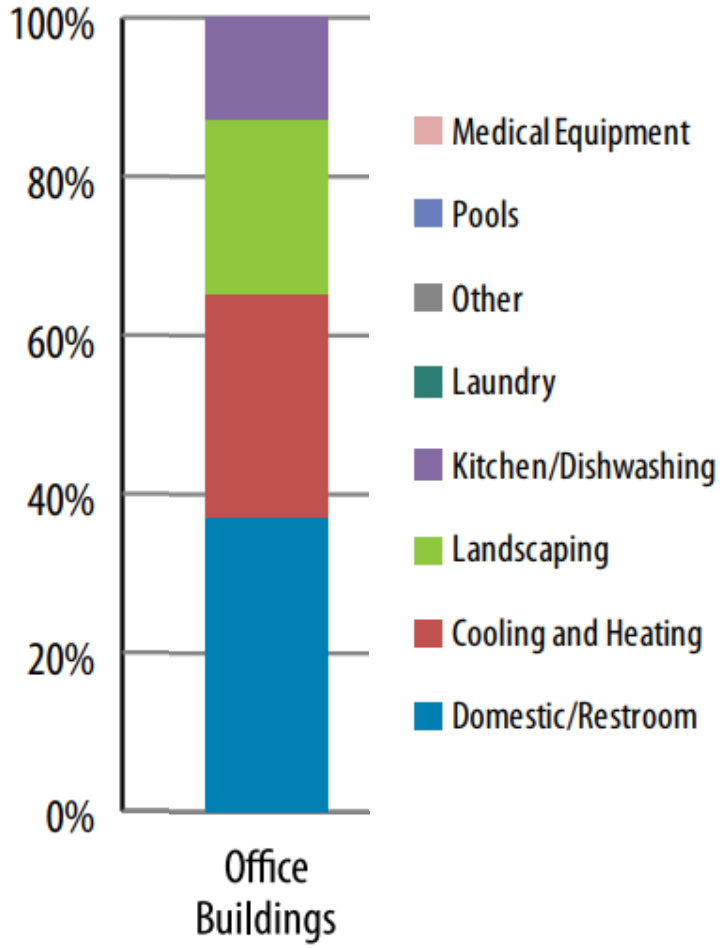
Step 2: Reduce water use

In admin areas:

- Spray aerators for bathroom taps (up to 90% saving on tap water)
- Waterless hand sanitizers
- Waterless urinals
- Cistern displacement device
- ‘Let it mellow’ policies
- Optimise water-cooled HVAC systems or convert to air-cooled

In manufacturing areas:
Key uses include: dyeing processes, humidification, cooling and steam systems.

- Install automatic Total Dissolved Solids (TDS) controls to minimise boiler blowdown (discharges)
- Optimise water use during dyeing



Source: US EPA 2012

What can businesses do?

- Appoint task team
- Water audits
- Meter and monitor, (incl. leak detection)
- Water quality requirements (fit-for-purpose)

- Water-wise behaviour
- Efficient processes
- Efficient fittings & technologies
- Water-wise landscaping

Examples:

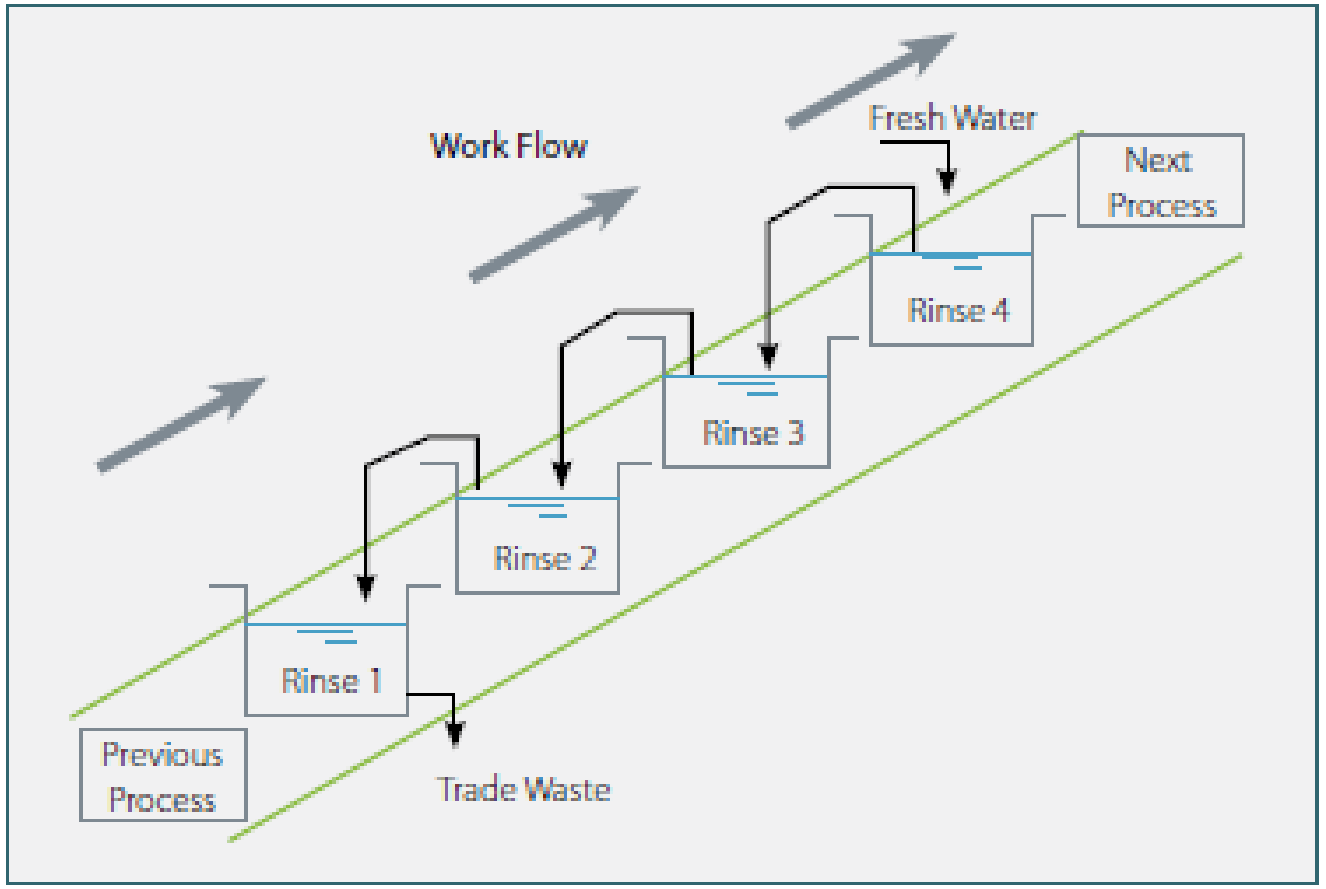
- Greywater reuse
- Basement (‘sump’) water reuse
- Condensate reuse
- Process wastewater reuse

Process water reuse

Some recipe steps could be recovered and reused, incl. bleach steps in white dying or in reactive dying process.

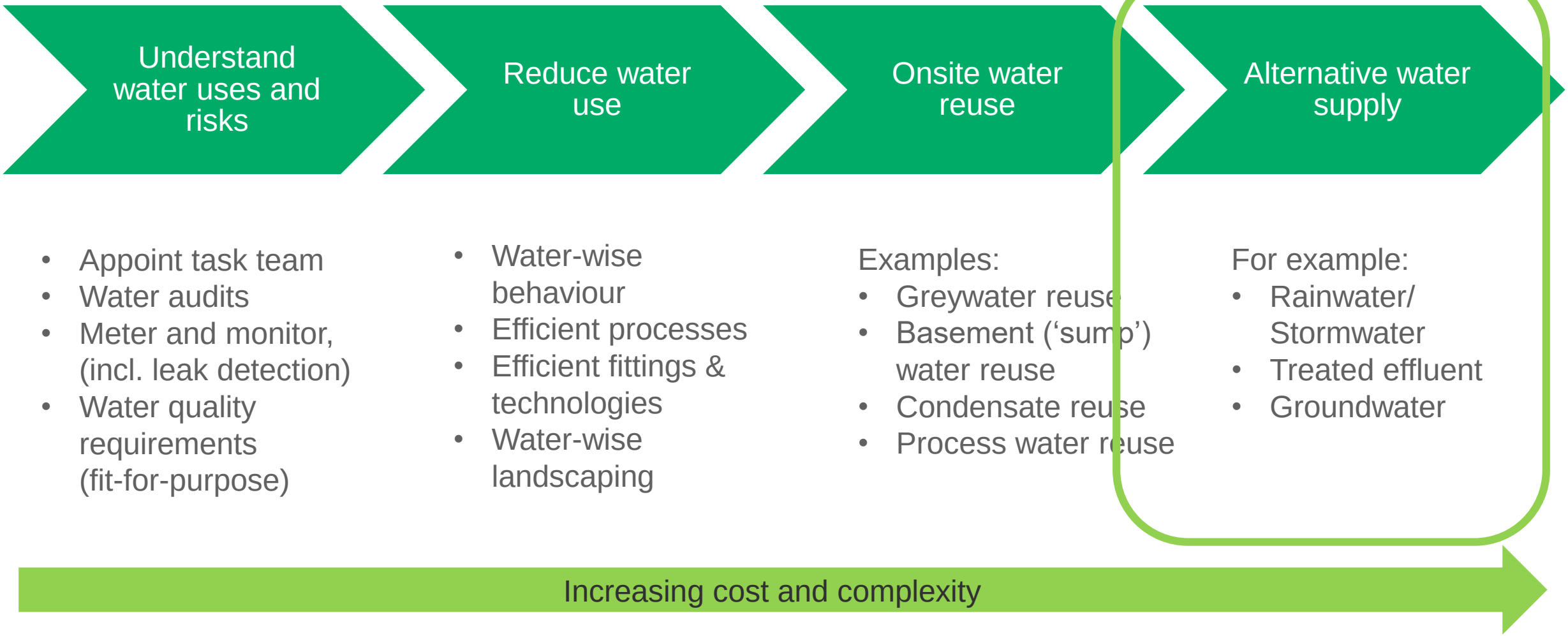
There are opportunities to reuse rinse water in a cascade fashion

- In most cases, no treatment required for reuse
- Additional storage infrastructure and process controls needed
- Typically leads to 10-20 % reduction in water and energy for dying process



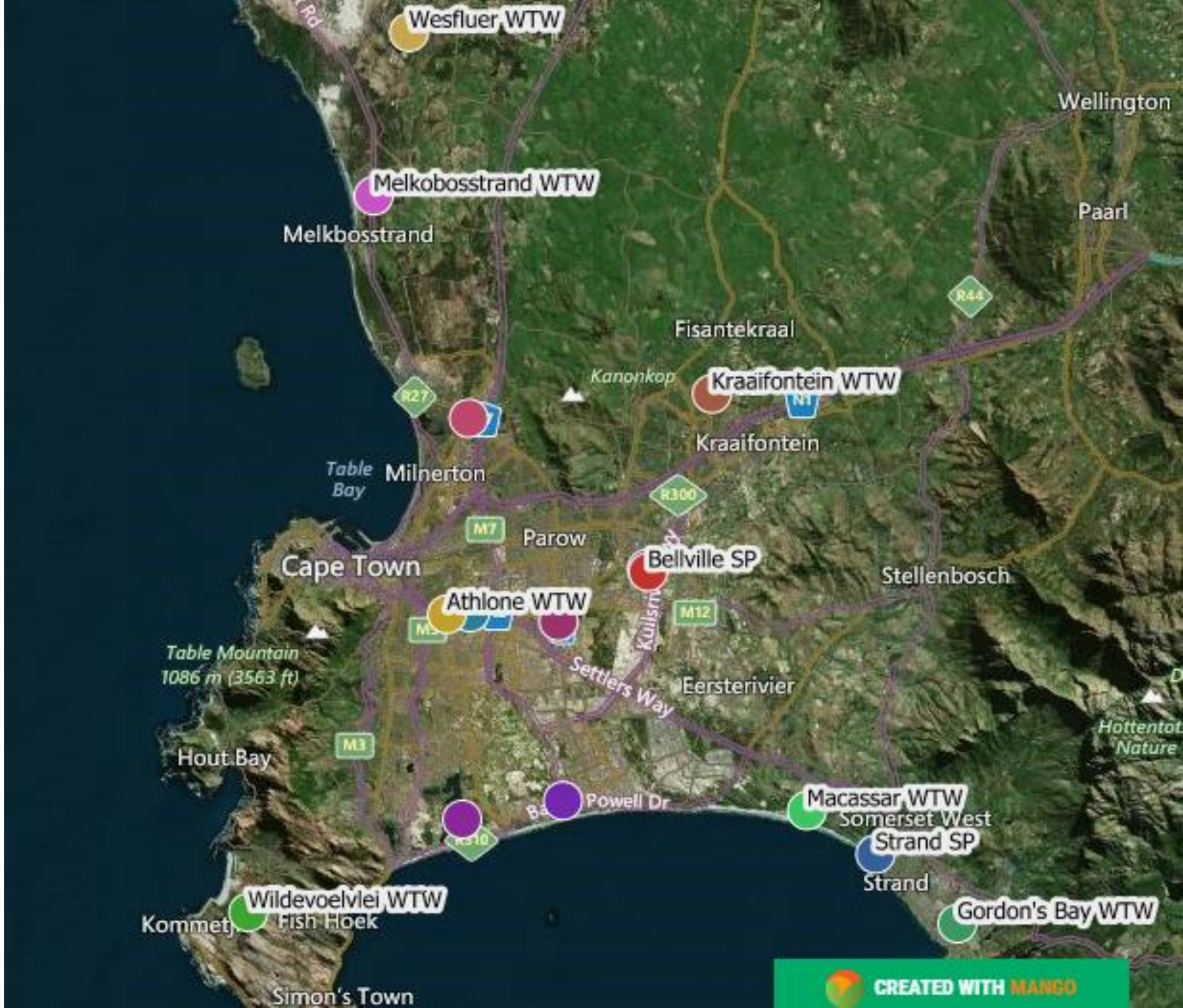
(Source: NCPC)

What can businesses do?



Treated effluent

- Treated wastewater from municipal WWTW
- In Cape Town, the cost is **R5.30/kl** (compared to municipal water supply of **R57/kl**).
- Businesses can either collect it at designated collection points or can connect to the existing treated effluent reticulation system.
- Untreated, it is suitable for toilet flushing, fire systems and other appropriate uses.
- Can be treated onsite to required quality



Alternative water supply

- Rainwater: Quick and relatively low cost. Even intermittent summer rains can top up tanks.

- Groundwater: Water Use Licence from DWS usually required for commercial and industrial users to ensure sustainable use of resource. Application requires yield testing of the boreholes (preferably undertaken by geohydrologists). Applications take up to 300 working days to approve. Users required to measure and report consumption.

Alternative water sources – City of Cape Town requirements

- Apply to the City for sink a borehole or well-point 14 days prior to installation
- Register the borehole or wellpoint with City after installation
- If the intention is to connect the alternative water supply (e.g. rainwater, groundwater, greywater, treated effluent) to existing plumbing reticulation, apply to the City to install the alternative water system, and ensure compliance with their guidelines, which includes installing a reduce pressure zone (RPZ) valve to prevent backflow into the City's water reticulation system.
- If the water is to be used for onsite drinking, cooking or body-washing purposes, then the business must apply to become a Water Services Intermediary with the City - here.

Drought support services available to industry

Useful resources

- Posters for staff awareness
- How to apply to install alternative water systems, sink boreholes or access treated effluent in City of Cape Town
- Rebate for investing in infrastructure to reuse water: contact Caashief Adams (caashief.adams@capetown.gov.za)
- Supplier database for water technologies and services (110% Green webpage)

Western Cape Government

110% GREEN

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

National Cleaner Production Centre

Free industrial water efficiency audits contact:

Andre Page

- Project Manager for the Clothing, Textiles, Footwear and Leather sector
- APage@csir.co.za
- 021 658 2762
- http://ncpc.co.za

NCPC
NATIONAL CLEANER PRODUCTION CENTRE
SOUTH AFRICA

GreenCape support to businesses

We're here to help, for free

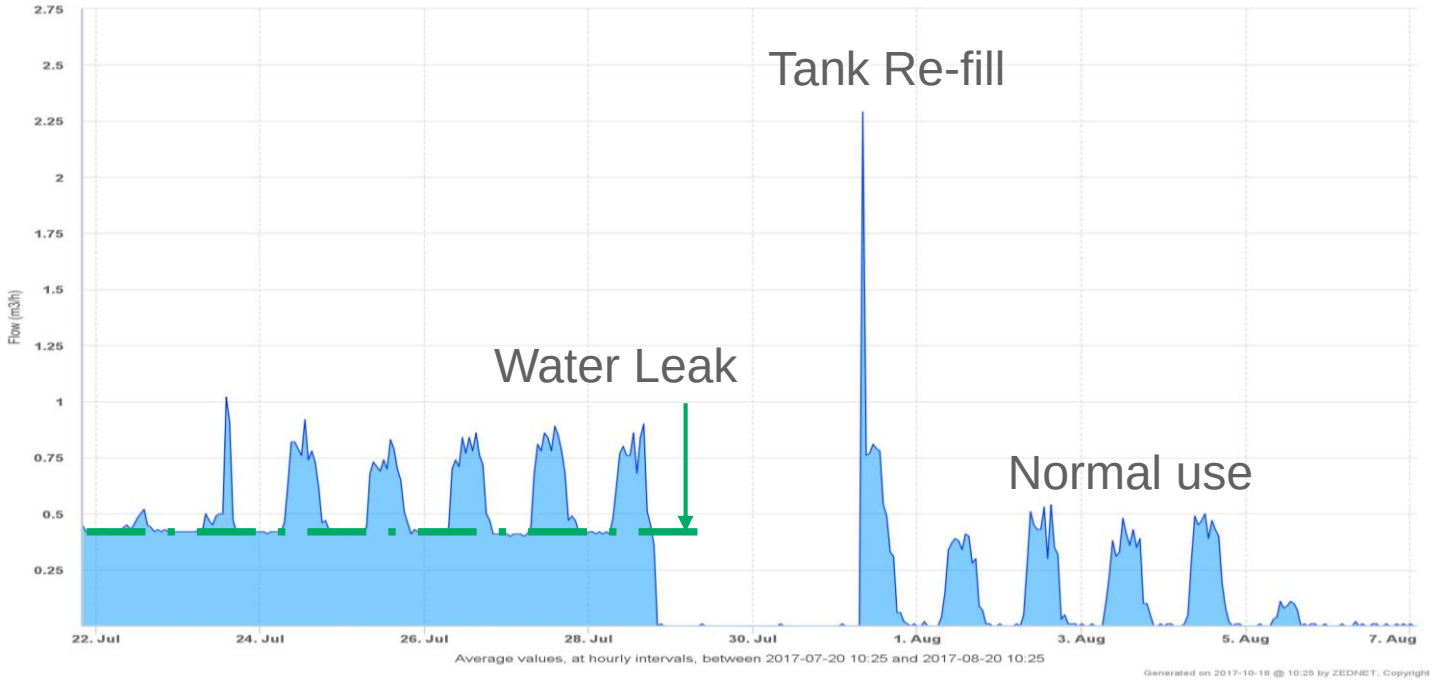
- Business support in scoping for water solutions:
  - Independent guidance on possible solutions for increasing water efficiencies, reusing or recycling water and supply options
  - Contacts for consultants and technology suppliers that could assist further
  - GreenCape's business support page: www.greencape.co.za/water-business-support
  - Regular business support events (www.greencape.co.za/content/focusarea/water-events)
  - Email: jane@green-cape.co.za for assistance
- Market Intelligence Report on the water sector, for free download at www.green-cape.co.za/market-intelligence
- Sign-up to be a member http://www.green-cape.co.za/become-a-member/ to receive invites to water-focused networking and information sharing events.

Case Study examples

Smart metering and sub-metering

Growthpoint

- The Estuaries (office park) achieved 70% water savings, largely due to smart metering:



Vineyard Hotel

- Purchased additional 20 water meters for ~R65,000 (some smart meters)
- Enabled them to detect significant leaks (e.g. replaced leaking dishwasher – saved 13 kl/day)
- Implemented staff and guest awareness programme
- Reduced water consumption by 30%

Water efficiency in dyeing

Some successful examples from the textiles industry:

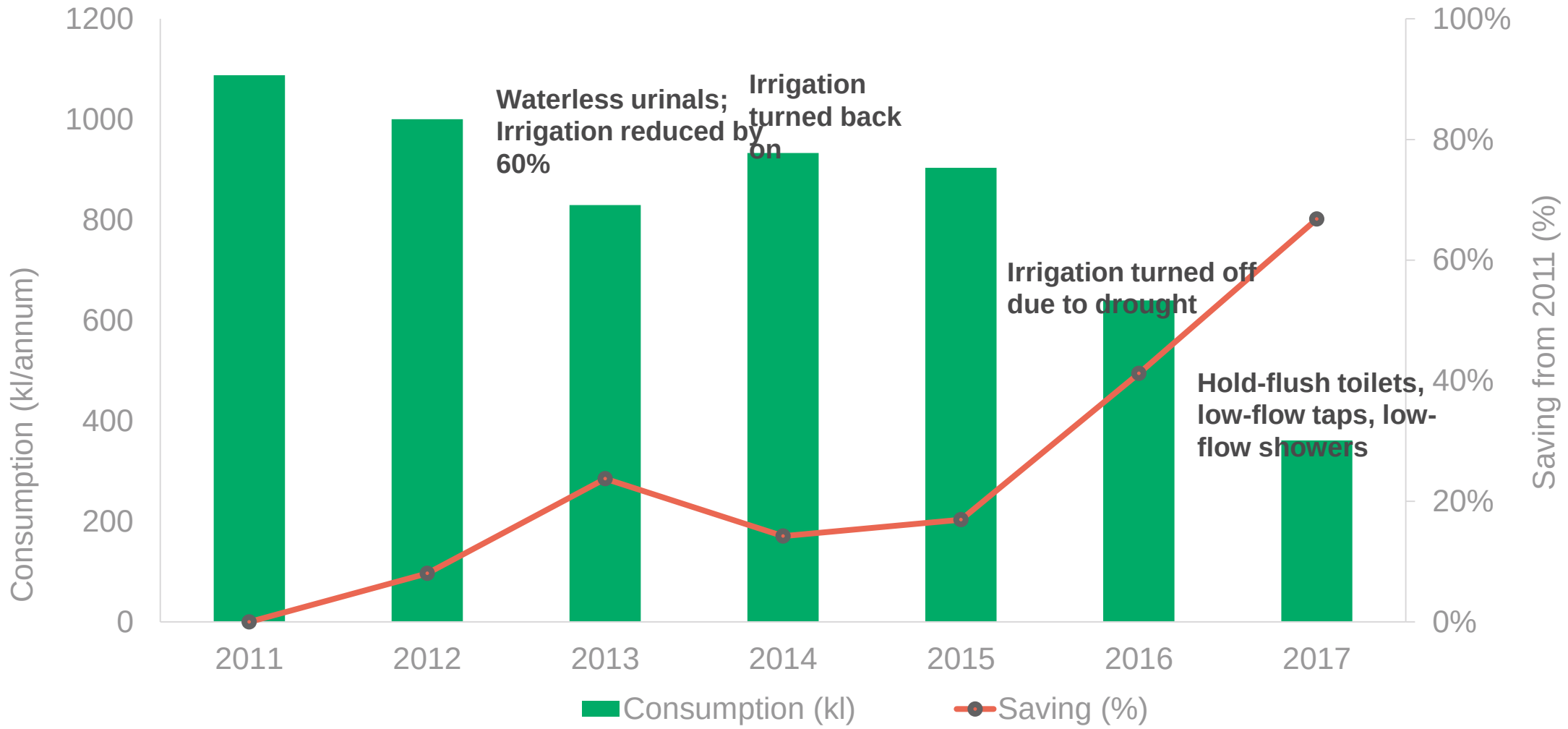
- **Winch dyeing** - Dropping the dye batch and avoiding overflow rinsing, cut water use by 25%.
- **High and low** - Replacing the overflow with pressure-jet dyeing batchwise rinsing, water use cut by ~50%.
- **Beam dyeing** - Preventing overflow during soaking and rinsing can reduce water use by ~60%. Automatic controls proved to be economical, with a 4-month payback period.
- **Jig dyeing** – 15 - 79% reduction in water use due to switching from overflow to stepwise rinsing. Rinsing using a spray technique, tested on a laboratory scale, was also effective.
- **Cheese dyeing** - A reduction in water use of ~70% with intermittent rinsing.
- **Continuous dyeing** - 20-30% savings achieved using automatic water stops. Horizontal washing equipment delivered 2x the performance of vertical washing machines, for the same amount of water.

Source: NCPC, 2017

Water efficiency in offices

Cumulative annual savings since 2011	**R33 424**
Total capital investment	R13 100
Annual water savings (2017)	727 kilolitres

JG Afrika (~60 staff)



Reuse of wastewater

Quality Beverages

- Soft drink manufacturing and bottling company (Jive, Mountain Dew and Mirinda etc.)
- Educational campaign
- Employee water consumption targets
- Reuse of rinse water from cleaning bottles: collected, filtered and reused in other stages

Monthly water savings (kl)	**3 000 kl**
Cumulative Savings since July 2016	R550 000
Total capital investment	R140 000

Thank You

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