

Water and Energy Efficiency standards for taps & showerheads



Herman Strauss
29 September 2022

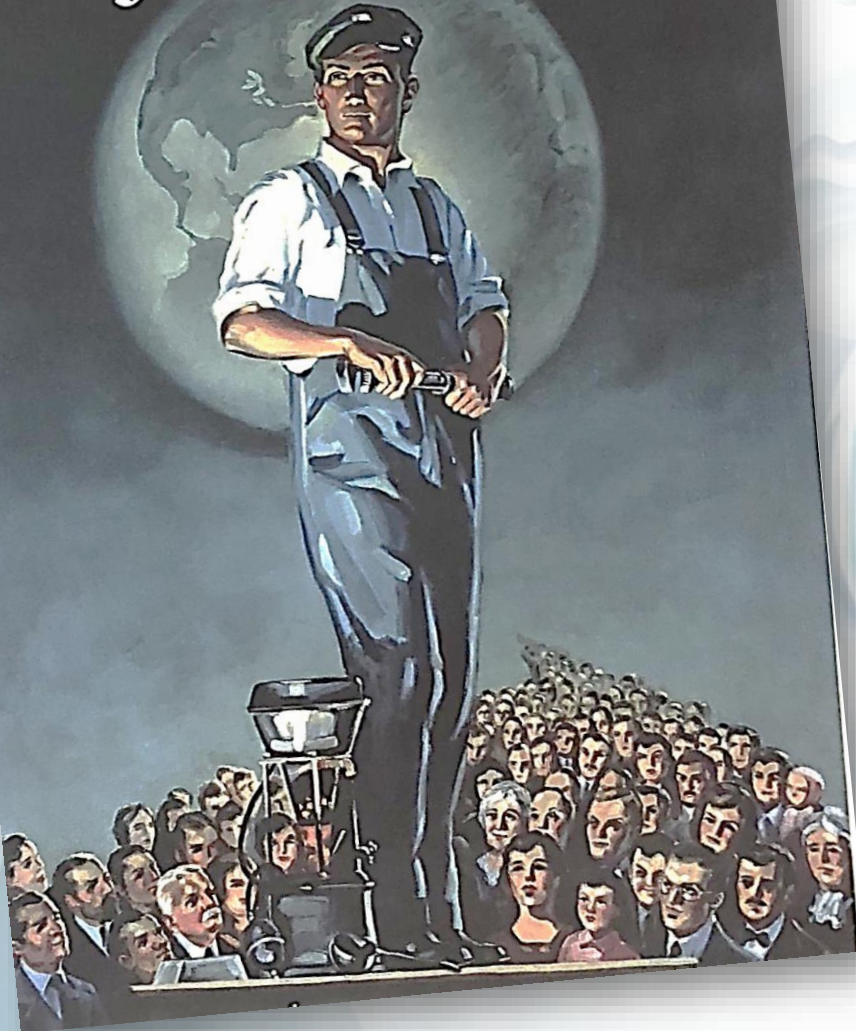


Saeef
Southern African Energy Efficiency
CONFEDERATION
Local Chapter of **CEE**
17th Annual Conference

South Africa's energy and water sustainability is at risk



The Plumber Protects the Health of the Nation

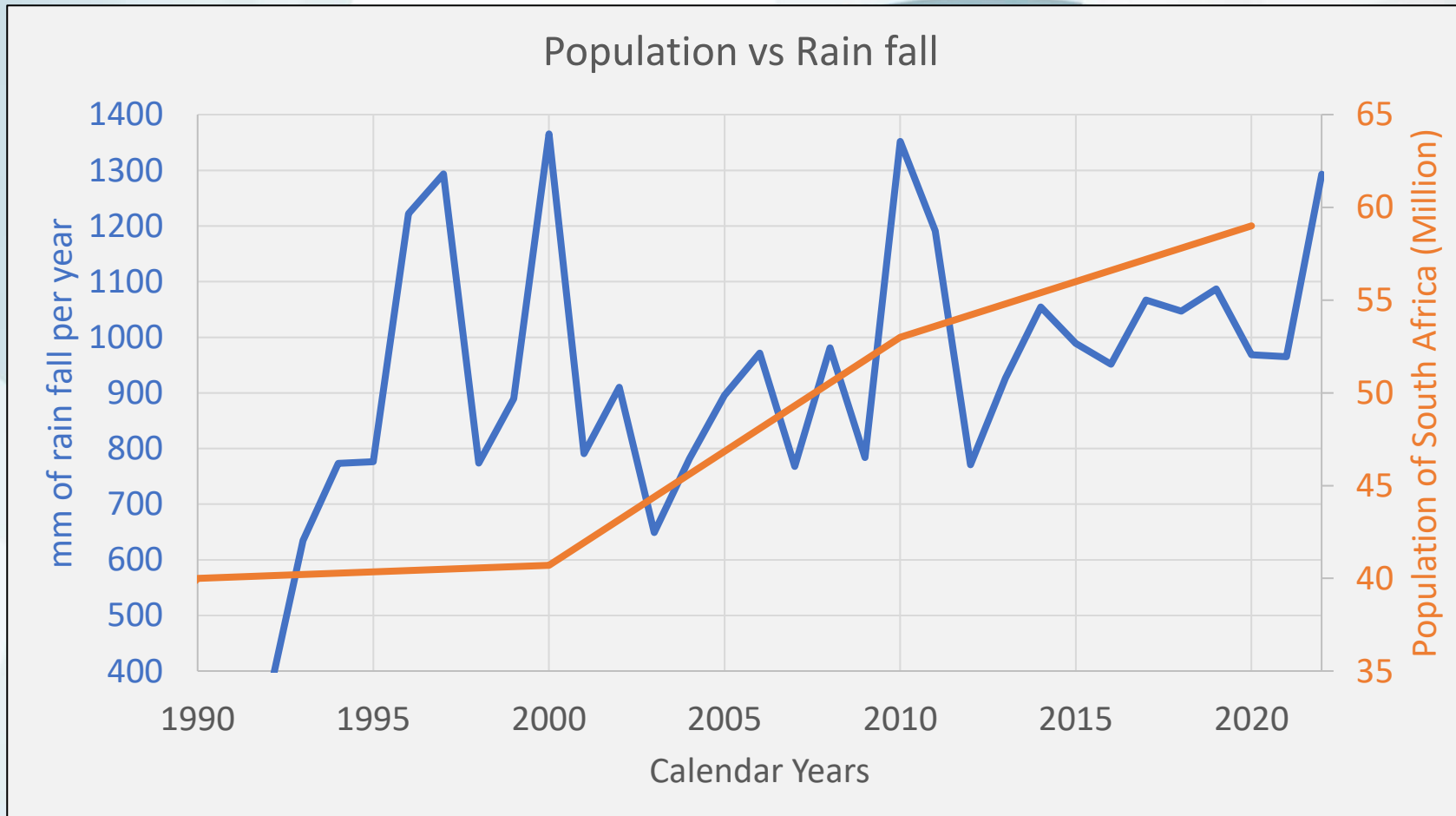


Water is critical.

- Health and sanitation
- Sustenance
- Removal of sewage
- Protection against sewage pathogens and gasses



Plumbing done incorrectly can cause serious harm



Rainfall data as published by: Alan Robert Clark (<http://ytdp.ee.wits.ac.za/rain.html>)

Population data as published by: 

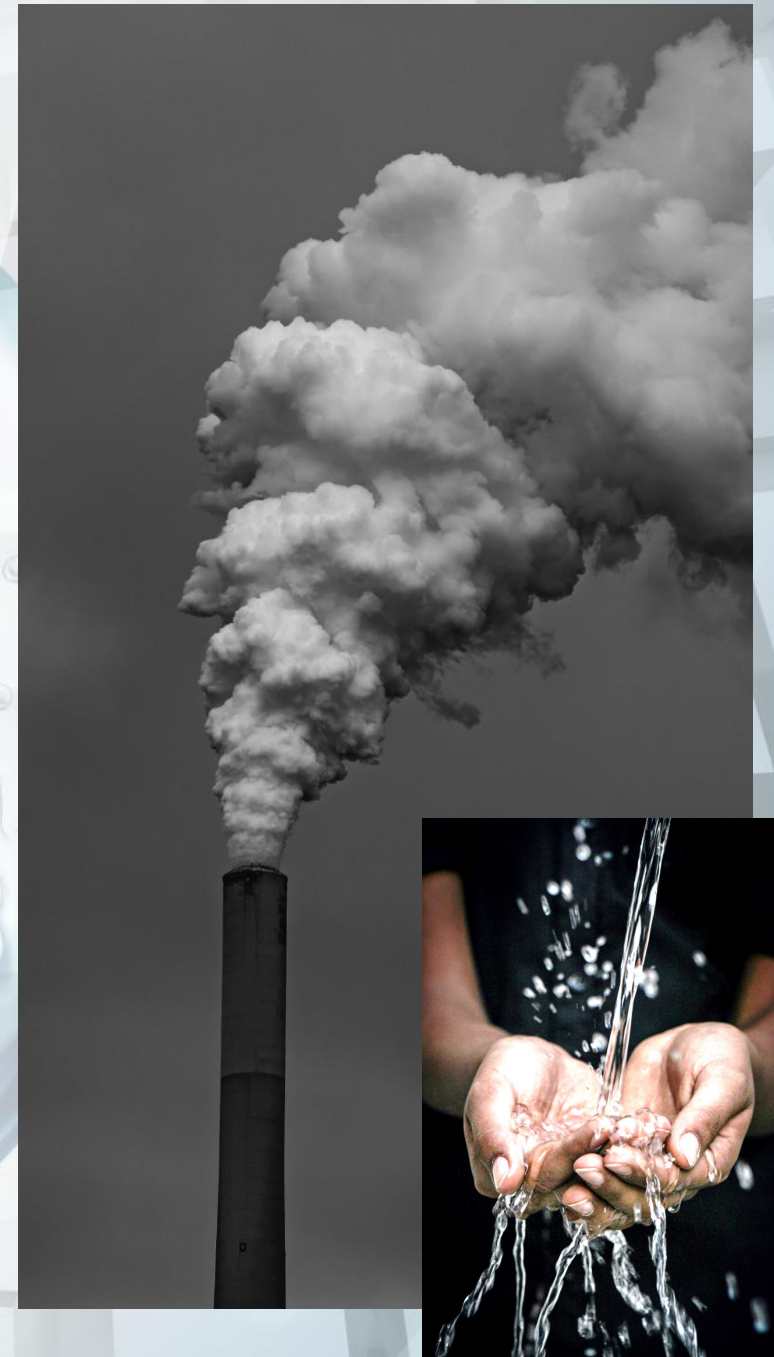
<https://www.macrotrends.net/countries/ZAF/south-africa/population-growth-rate>

Various project attempted to provide more water, e.g. Reverse Osmoses / Desalination

- Requires high energy input
- Most energy is still derived from burning coal

Projects are important for specific objectives, but is not a long term solution that can make a large scale difference

**To improve water sustainability, the USE of water
must be addressed**



Heating water consumes a significant amount of the household energy



Every drop of water that is saved, also saves energy and reduce carbon emissions.

Households and industries

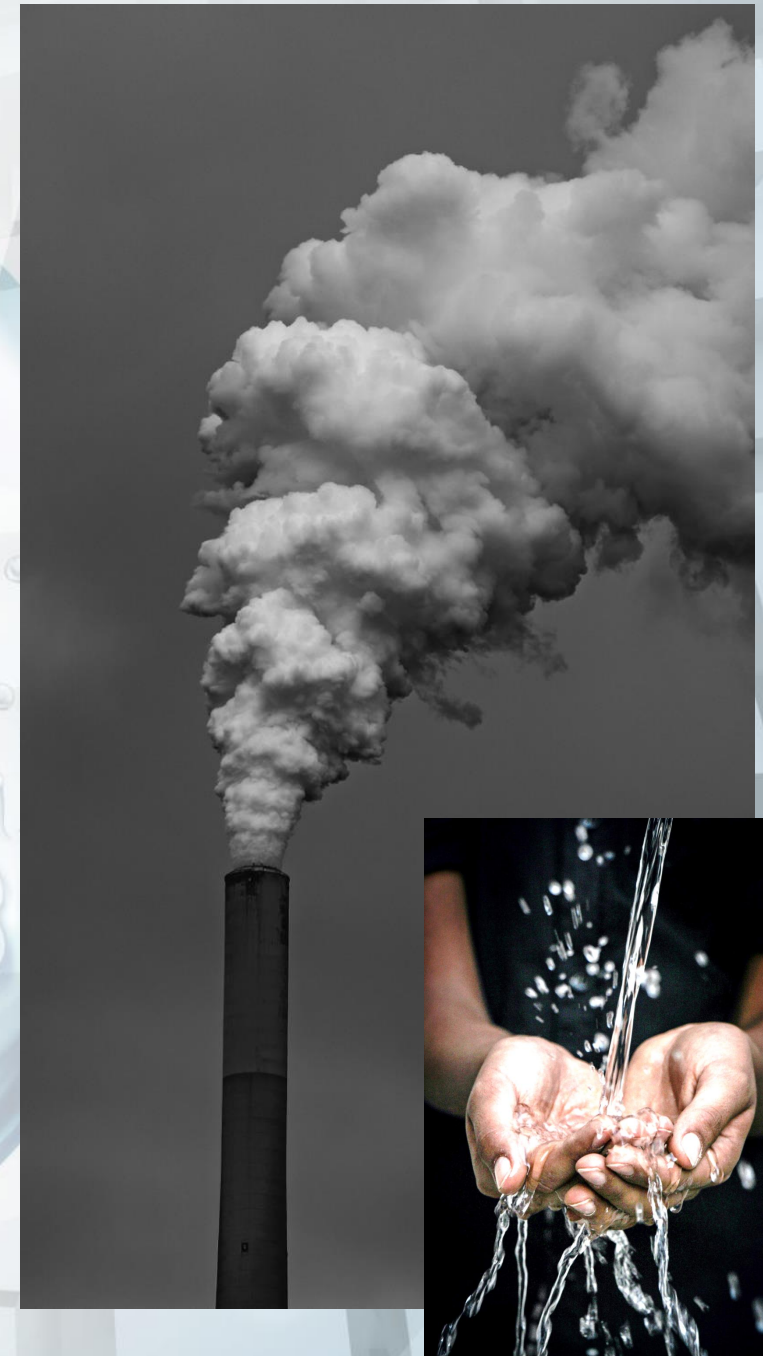
- Heating of hot water for basic sanitation.
- Food and beverage preparation
- Water used in industrial processes

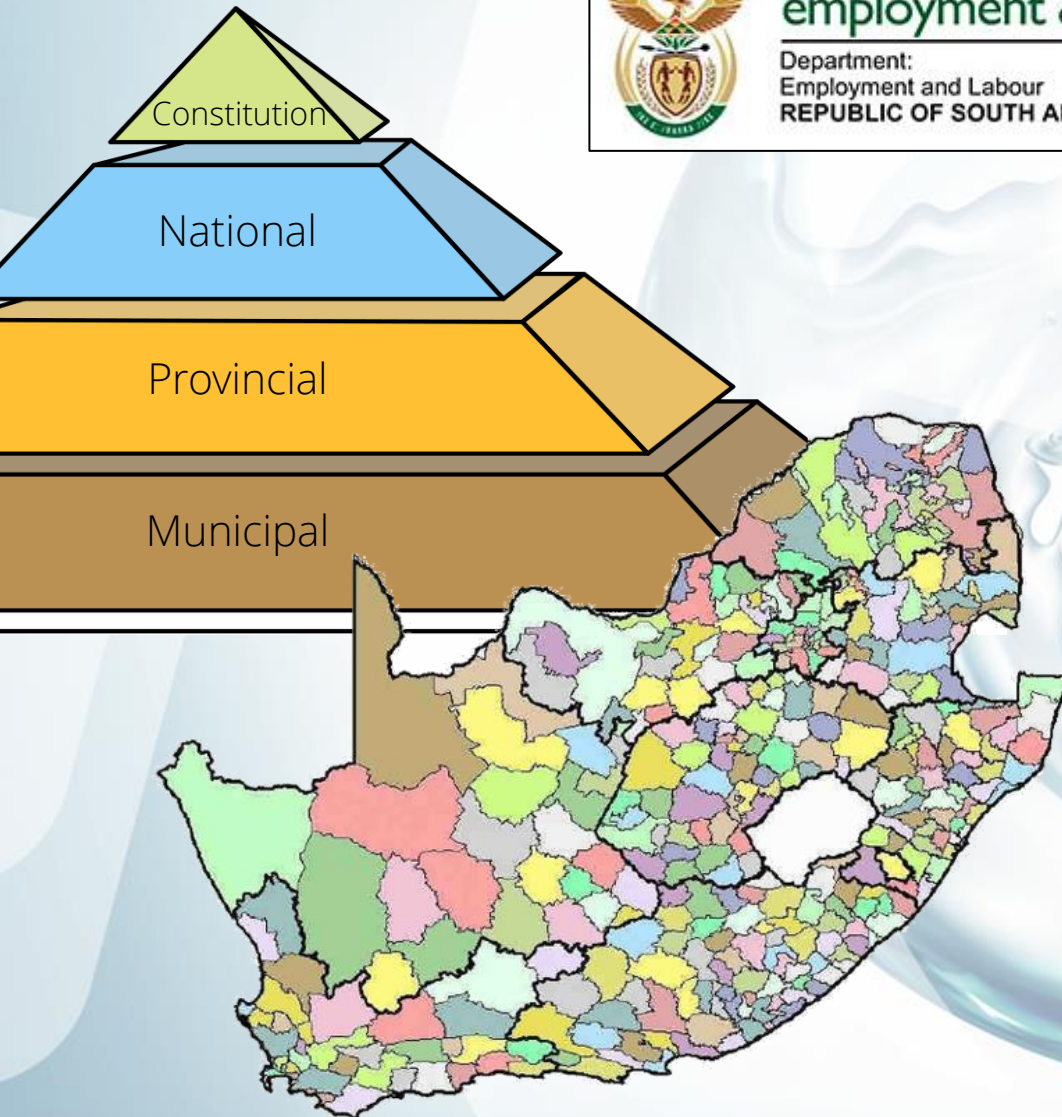
Water supply infrastructure

- Collection of water
- Water treatment
- Distribution of water
- Maintenance of distribution networks

Sewage infrastructure

- Treatment of sewage
- Maintenance of infrastructure





National Building Regulations (DTIC)

- Requires compliance with Part P of the regulations (e.g. SANS 10400-P)
- Consumer protection act

Water Services Regulations (DWS)

- Requires compliance to:
 - SANS 10254 (Installation of geysers)
 - SANS 10252-1 (Water supply installations)
 - SANS 10252-2 (Drainage installations)

Pressure Equipment Regulations (DEL)

- Requires compliance of geysers to the product standard (SANS 151) and installation to SANS 10254



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**Building control regulations, only address drainage /
sewage, not water supply.**

BCO – does not inspect water supply

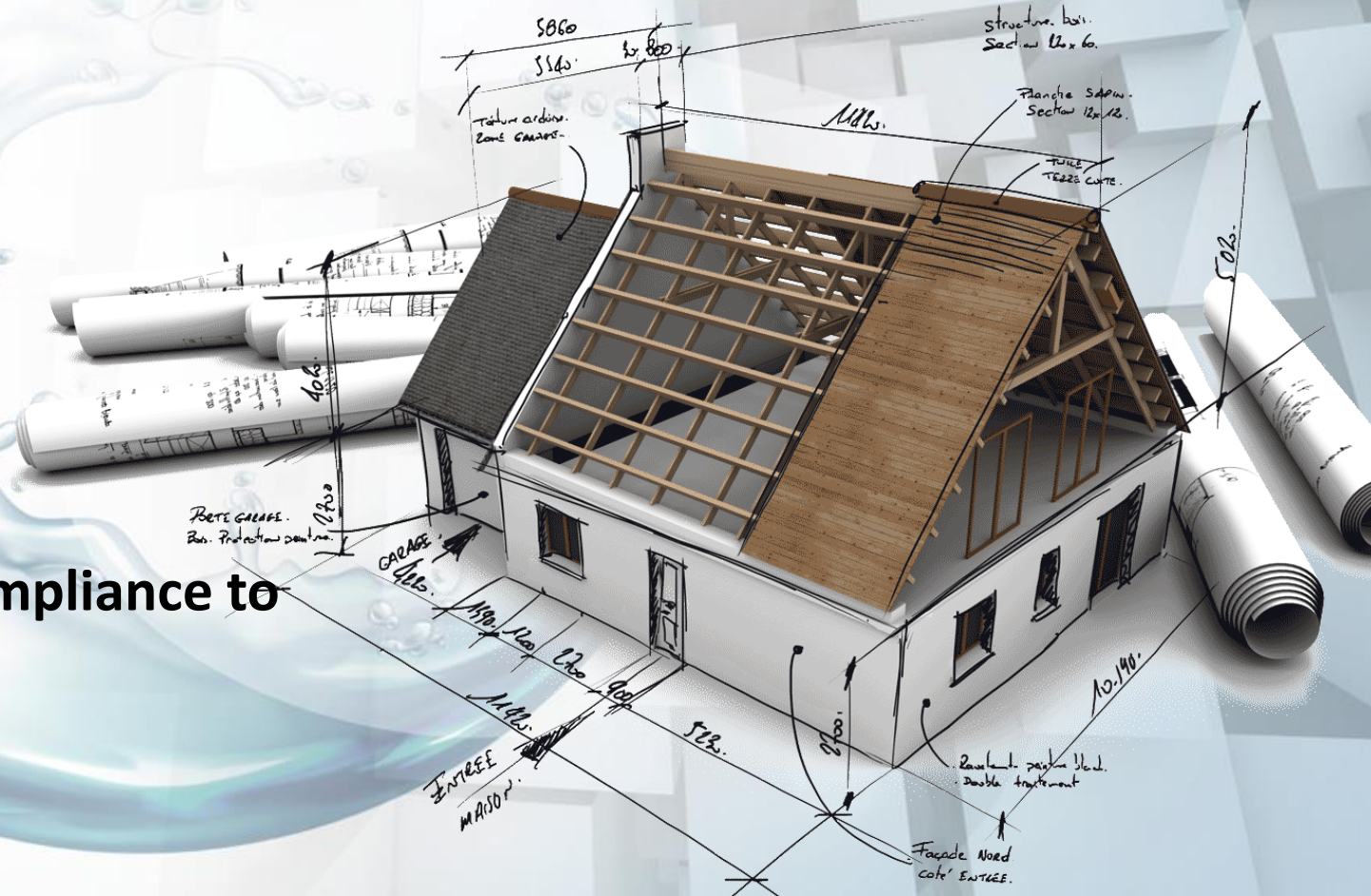


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**Water services regulations require compliance to
SANS standards,**

There is no national enforcement



NATIONAL WATER AND SANITATION MASTERPLAN

Action item number 1.4.3

“Establish Water Efficiency Labelling and Standards (WELS) Scheme”

Target date 2025

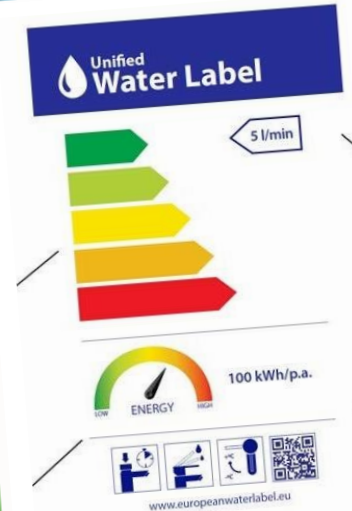
Known / Perceived Gaps:

- Current SANS standards are not aligned with each other.
 - ❖ Verification and Enforcement is not possible without alignment
- Current SANS standards are not aligned with international standards
 - ❖ Limits the scope of available products in SA
 - ❖ Prevent efficient products from being sold in SA
 - ❖ Technical barriers to trade (import and export)



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<https://www.clasp.ngo/>



<https://www.sanedi.org.za/>



<https://jackstrasolutions.co.za/>



The study included analysis of the following:

- Alignment of the 9 SANS tap standards
- Alignment of tap standards to SANS installation and efficiency standards
- Alignment of SANS standards with international standards

Results indicated:

- Various misalignment between SANS standard
- Incomplete technical specifications preventing alignment
- Guidelines for national and international alignment



SABS

South African Bureau of Standards

SABS-TC 60

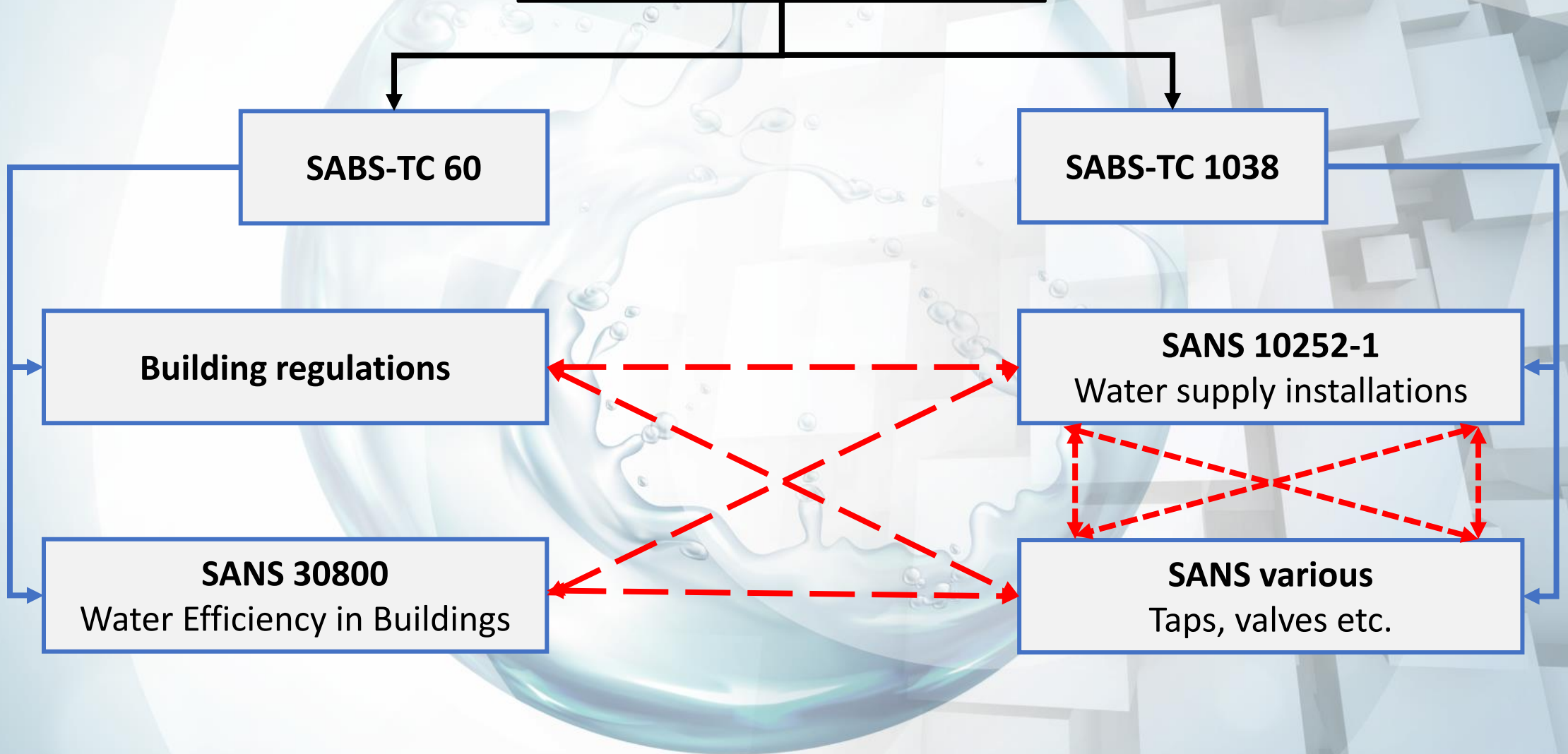
SABS-TC 1038

Building regulations

SANS 10252-1
Water supply installations

SANS 30800
Water Efficiency in Buildings

SANS various
Taps, valves etc.



Example:

Tap Standards:



0 – 12 l/min



15mm: 0 – 9 l/min
20mm: 0 – 18 l/min)

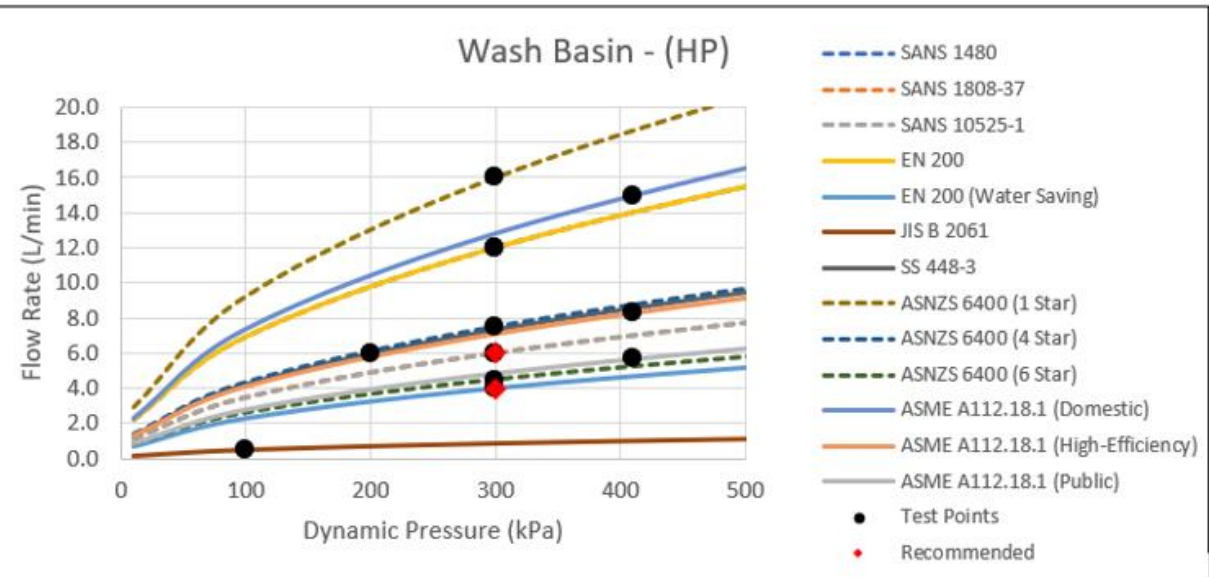


0 – 12 l/min

Installation:

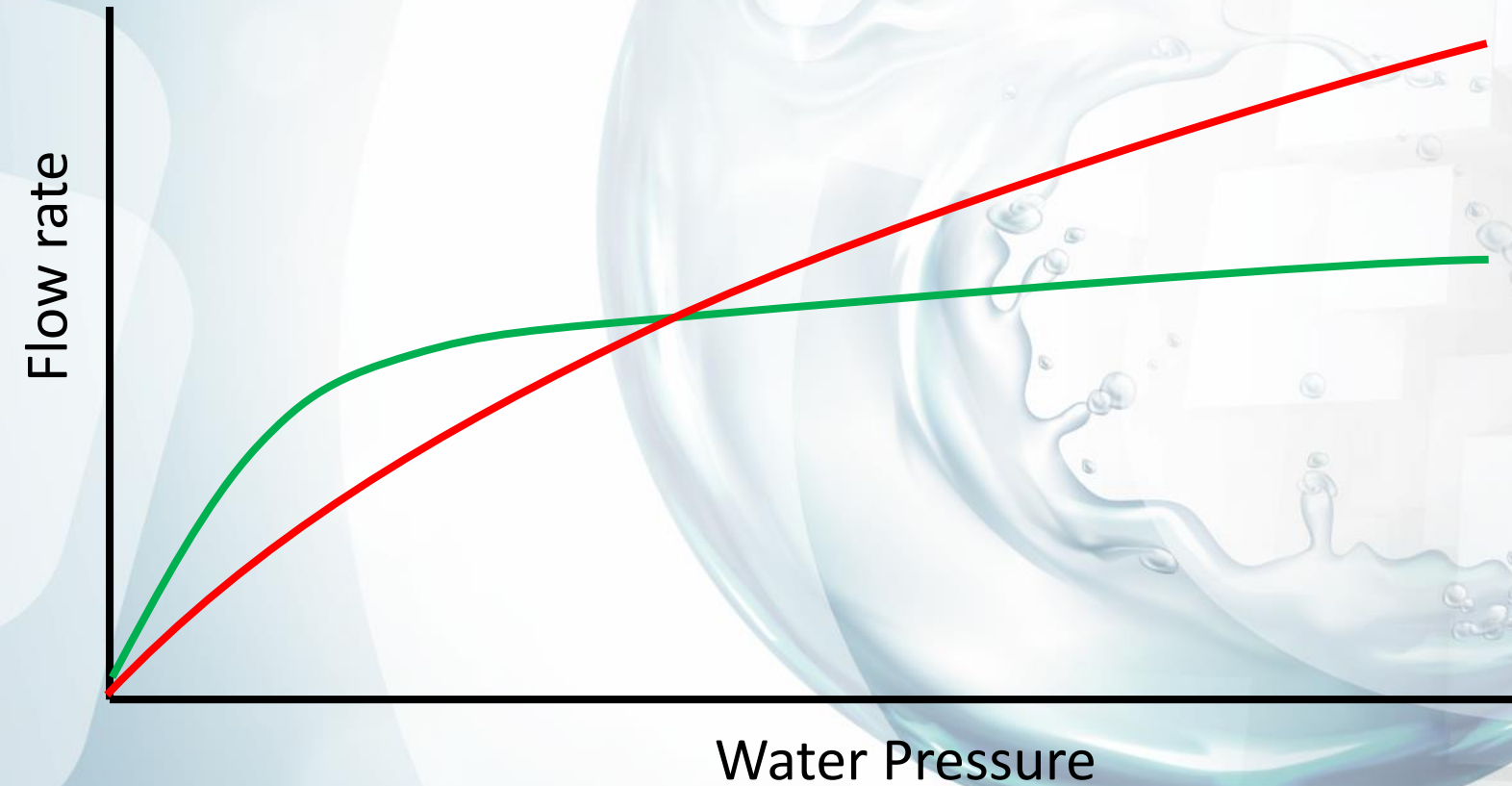
SANS 10252-1 (0 – 6 l/min)

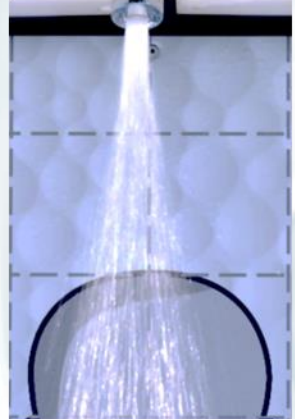
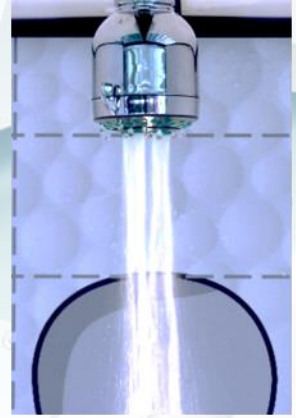
SANS 3088 0 – 5 l/min



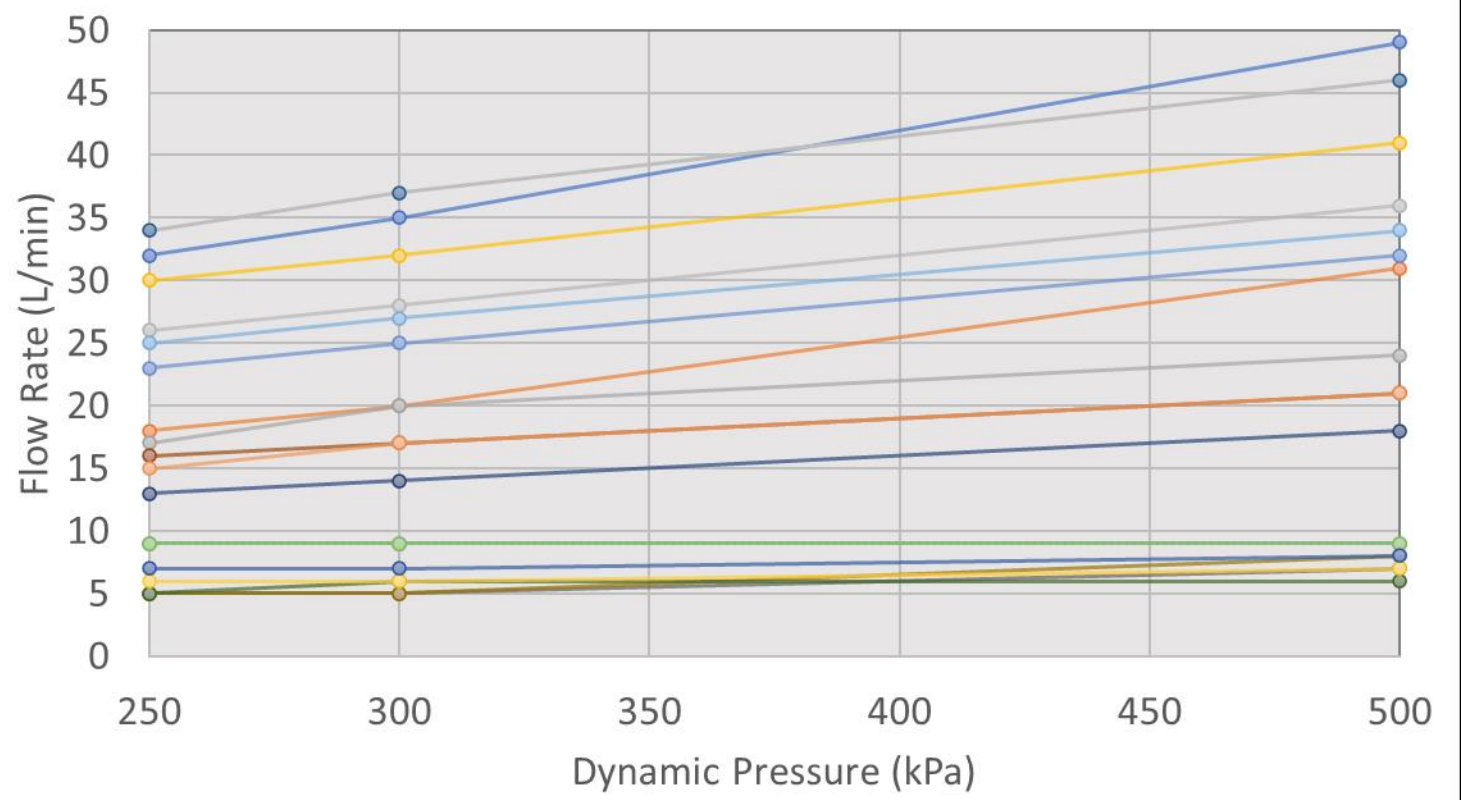
Showers are significant contributors to water usage.

- There is no standard for shower heads
- Without a standard the usage cannot be controlled (voluntary or legislative)
- Benchmark tests were conducted





Depiction of Shower head flow rates



The focus should not be to use **less** water,
The focus must be, to use **JUST ENOUGH!**



A toilet flushing less than 3 liter leads to blocked sewage systems. To clean this more water is used than what was saved.

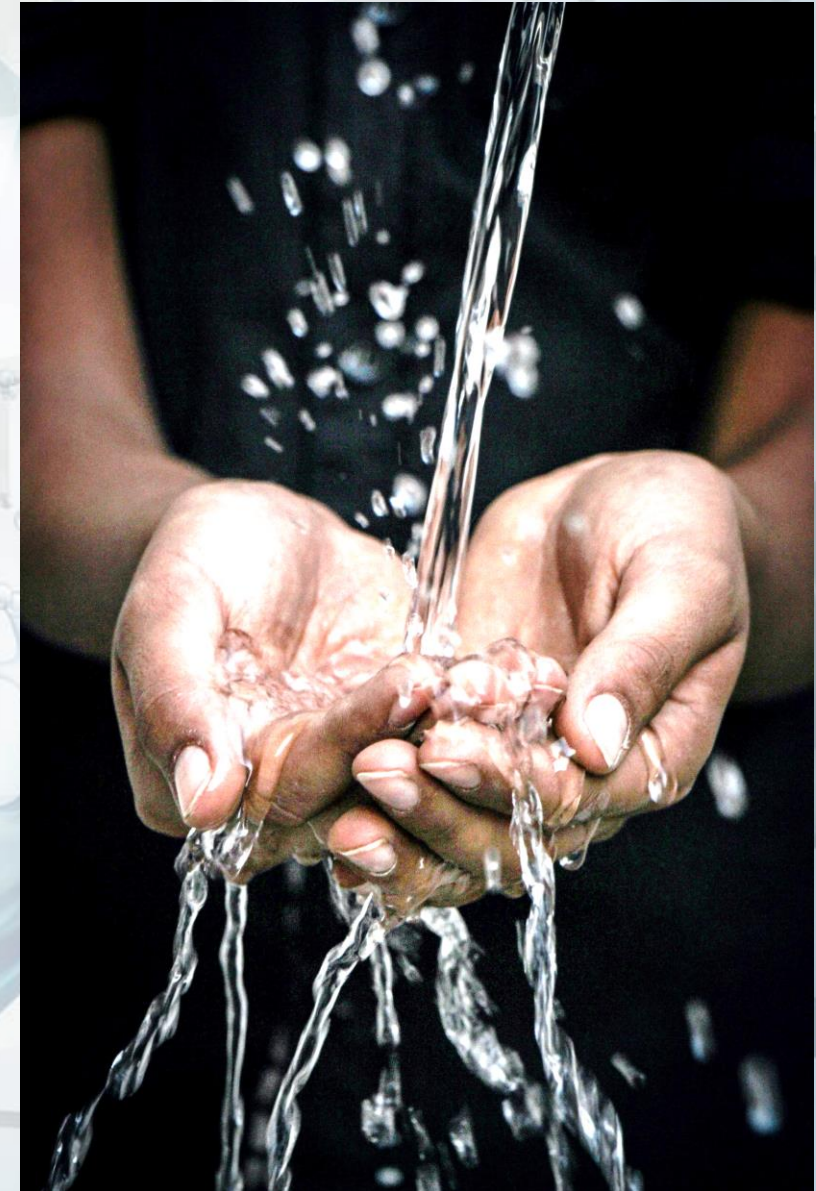
A shower that does not feel like a shower leads people to shower longer, or tamper with the flow control



Outdoor taps must be ready for fire protection, a low flow can risk safety.

The good news is that work already started on alignment with standards.

- Tap standards are currently under review
- A project have been opened to compile a shower head standard
- Awaiting confirmation of the review of the installation standards
- SABS participated in the drafting of ISO 316 “Water efficiency labelling programmes – requirements with guidance for implementation” This paves the way for a WELS in SA



What happens next?

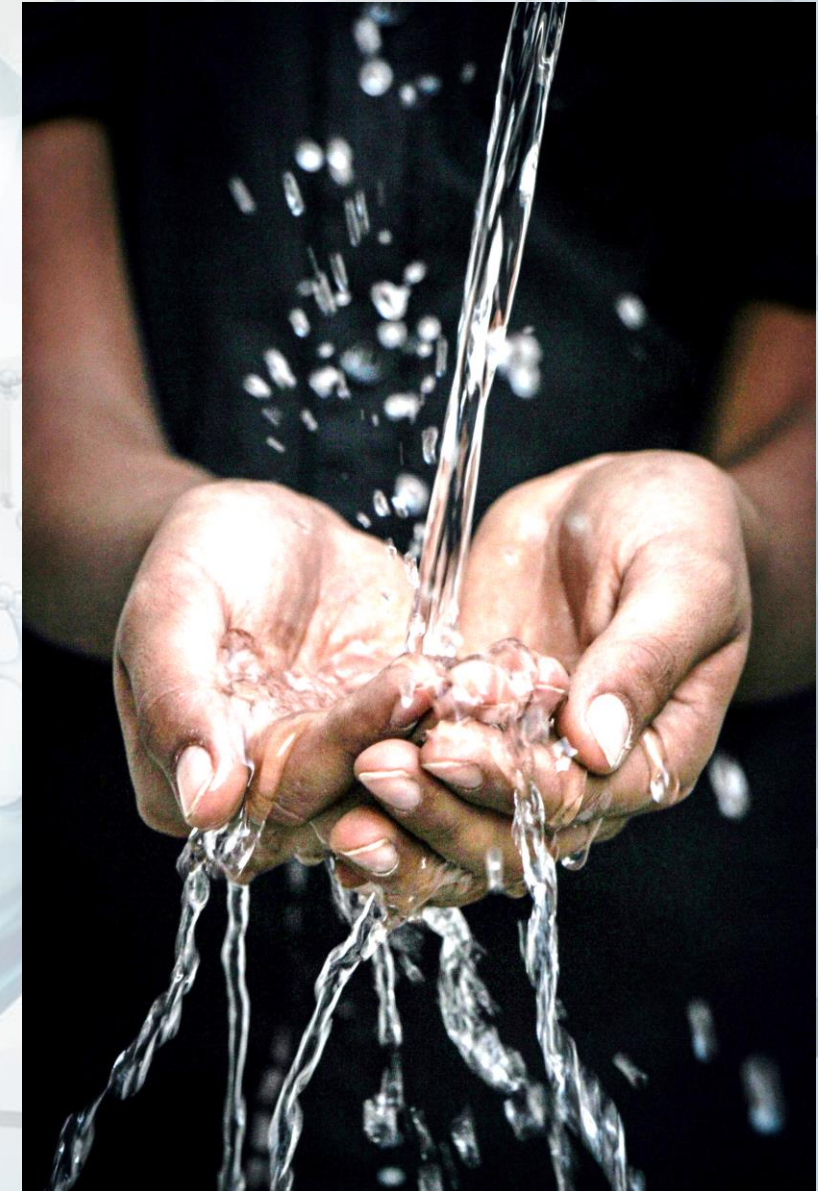
The process of aligning standards happens within the SABS structures.

- If you are part of these, please participate actively
- If you have something to offer, please join the committees
- If you just want to send in some comments, please do so.

https://www.sabs.co.za/Standardss/standards_involve.asp

Work by DWS on a WELS is anticipated.

- Support this initiative
- Participate in all phases of the project
- Help to present a holistic view



Set an example and support voluntary programs:

e.g. Energy Efficiency of Geysers:

- The regulation VC9006 improved insulation for geysers, and this is well enforced.
- Consumers remain unaware that failure to insulate surrounding pipework can undo this saving. (even though regulations require insulation)
- Incorrect placement of a geyser can result in dead-legs, causing wasted water.
- This is exaggerated by work done by unqualified plumbers that don't understand the importance.

Making use of a **Licensed Plumber**, and requesting a professional Body (PIRB) Certificate of Conformance (COC) ensures that this is not overlooked and improved over time.

<https://pirb.co.za/>



Collaboration is important if we want to make lasting changes.

- More voluntary initiative to promote water and energy savings are beneficial
- Avoid working in silos, it leads to misalignment.
- Don't underestimate the value of standards in these processes, it prevents unintended consequences.

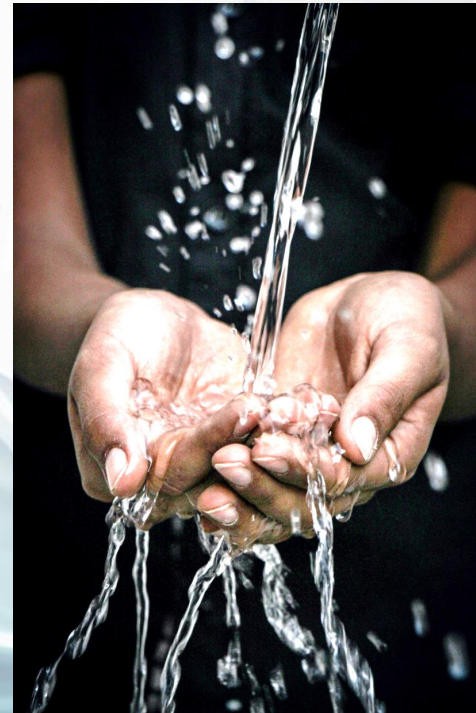


e.g. There is a place for low flush toilets, but spending resources to develop the toilet only without considering the infrastructure around leads to losses.

Let us practice what we preach.

Each drop/watt that you save, help make sure there is enough for everyone.

Each drop/watt that you save, teaches your kids to do the same. They learn from what you do not what you say.



Thank you

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