

German-African Partnership for Water and Sanitation - GAPWAS

ASK THE EXPERTS vol. 6

Valorising the end-products of domestic and industrial wastewater treatment

25.04.2023

Wastewater: A valuable resource



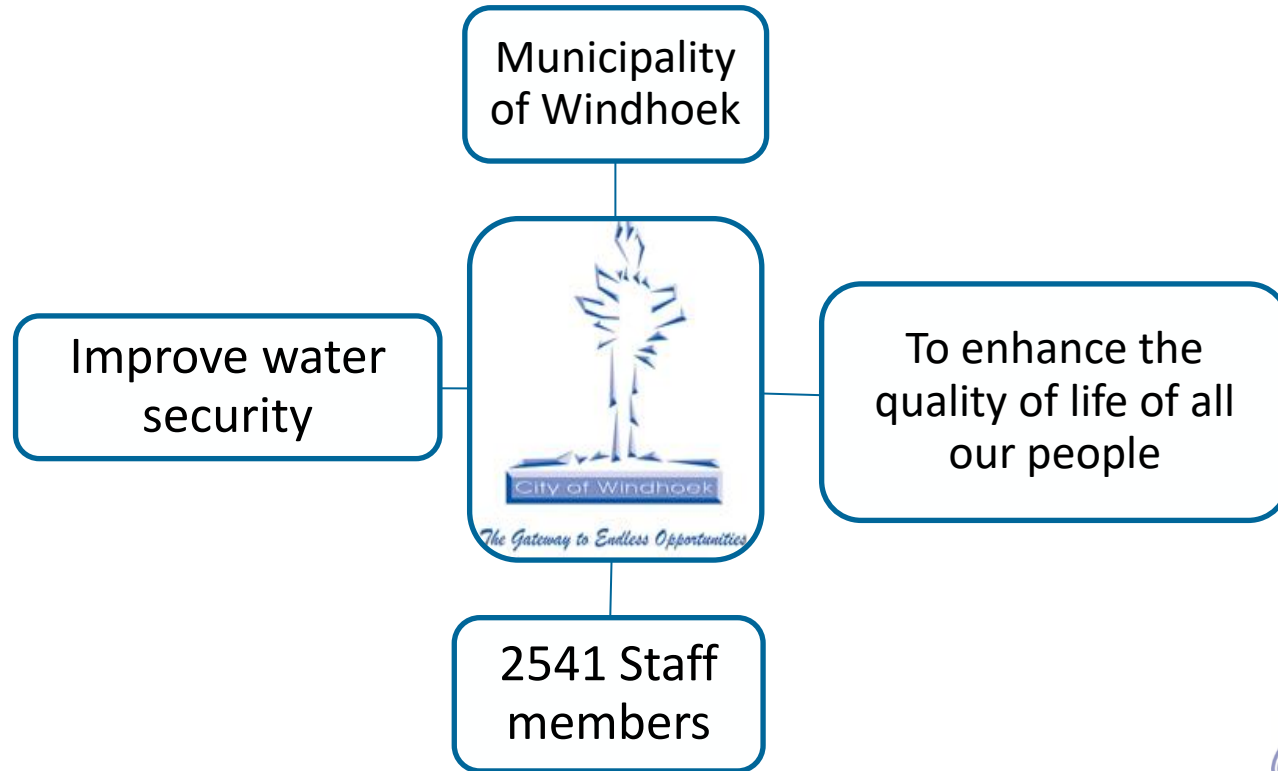
African Water and
Sanitation Association

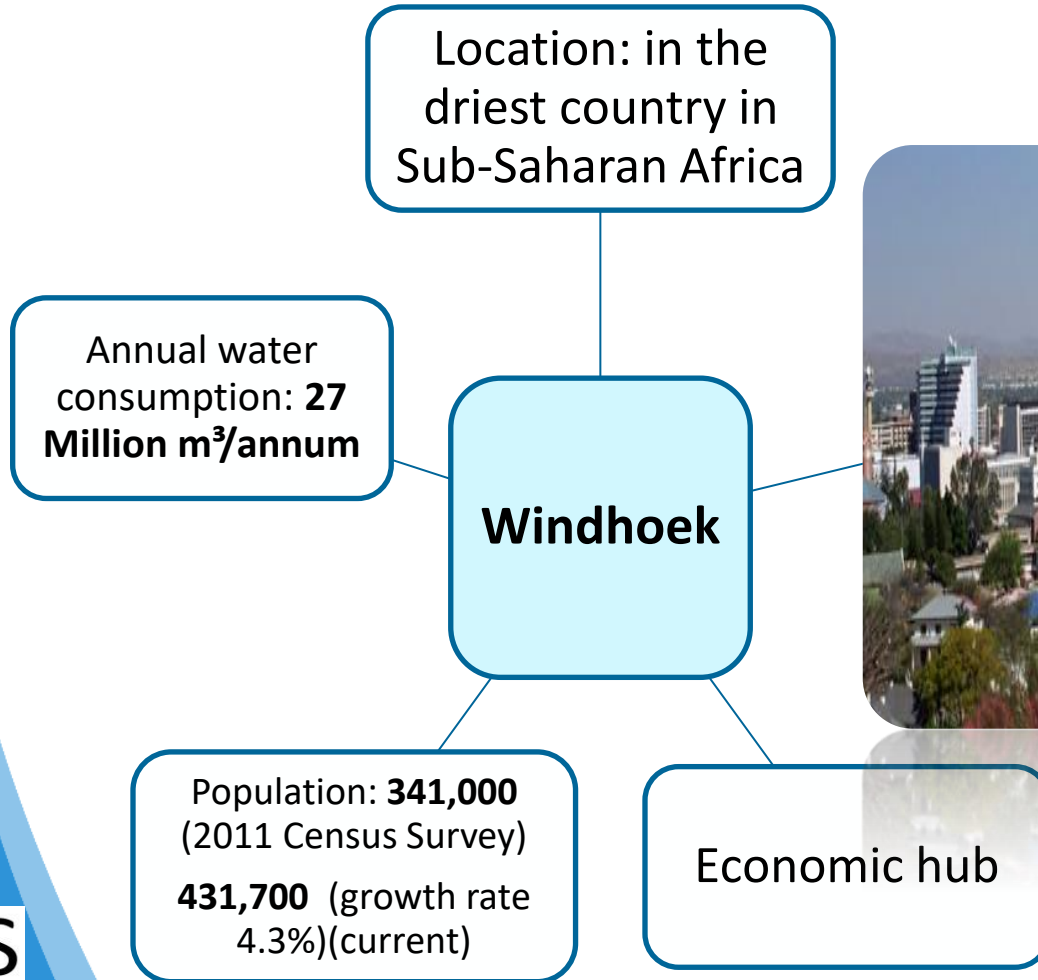
Association Africaine de
l'Eau et de l'Assainissement

AWASA / AAEA



German Water
Partnership





Every Drop Counts

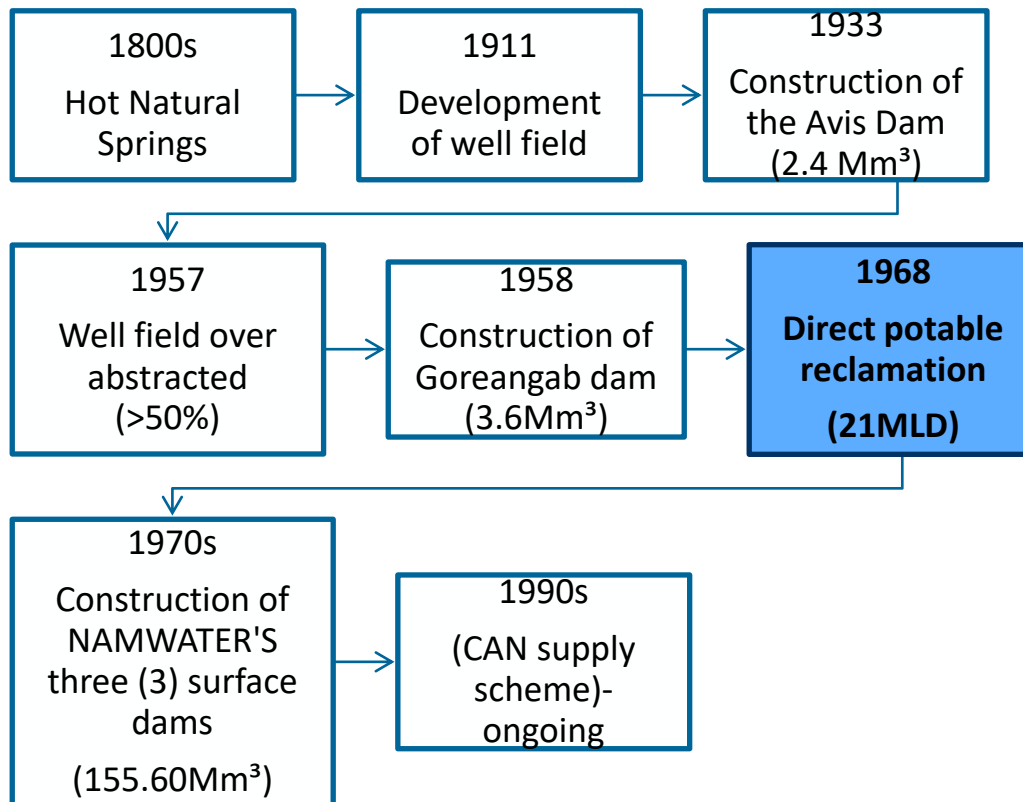
Water Security Uncertainty

- High population growth rates increasing the water demand
- Repeated Irregular rainfall patterns
- Annual rainfall: 300-400mm
- Annual Evaporation: 3000-3500mm
- Regular droughts
- Ephemeral rivers are fully harnessed
- Perennial sources are located too far away
- Perennial rivers are national borders
- Potable water sources within close proximity have been fully exploited

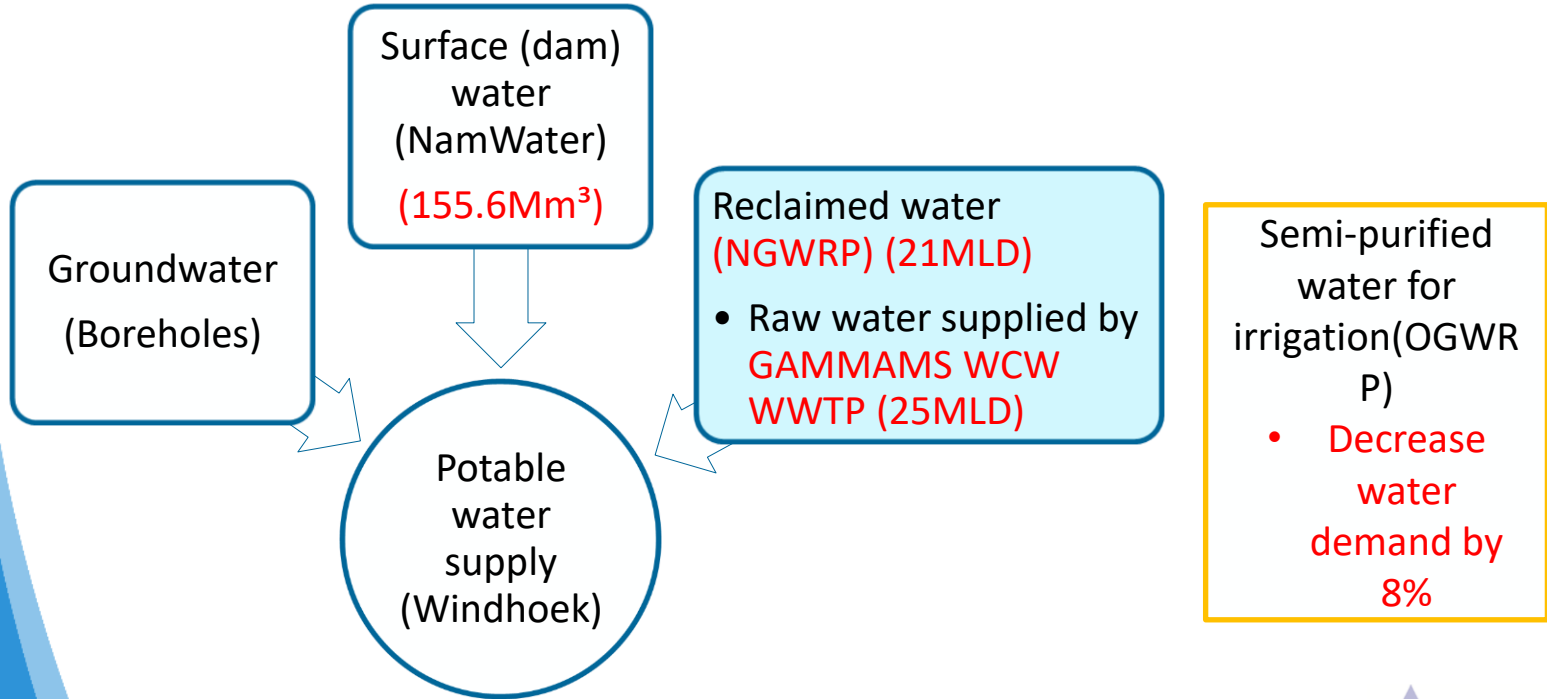


Every Drop Counts

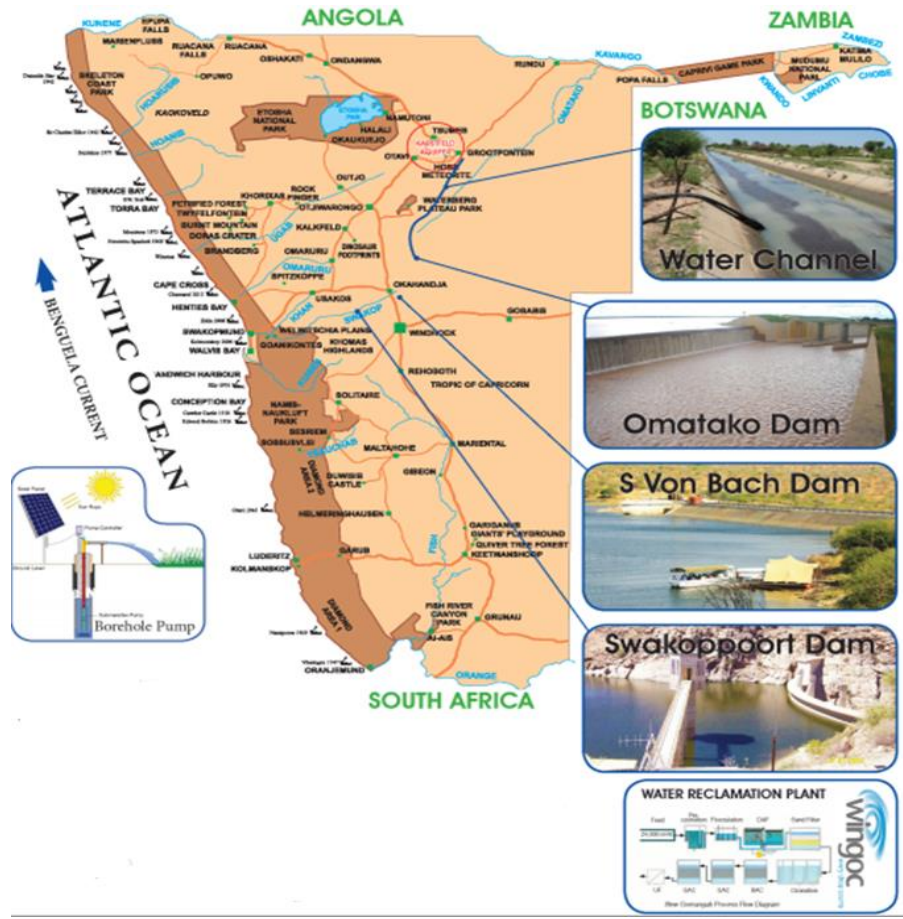
Windhoek: Timeline of the potable water supply scheme



Windhoek: Current potable water supply scheme

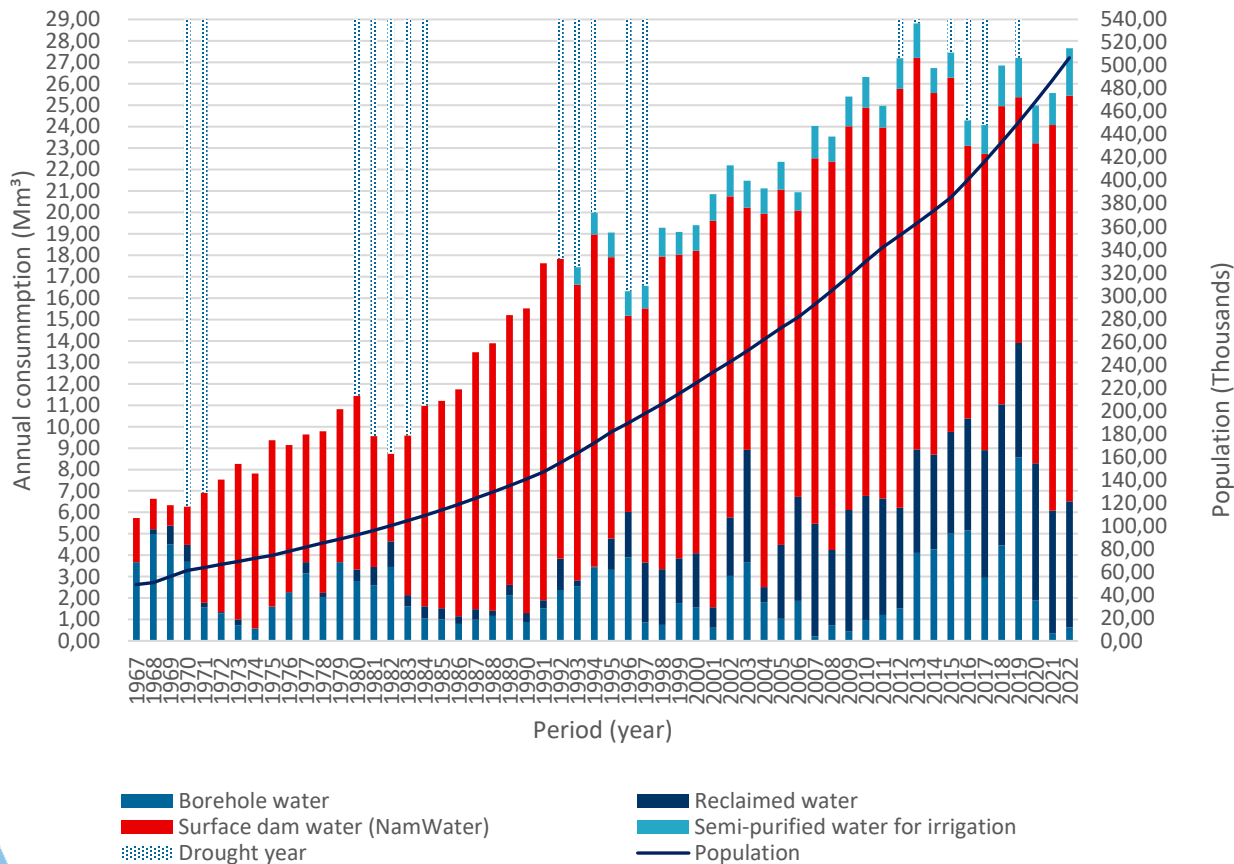


Windhoek: Current potable water supply scheme

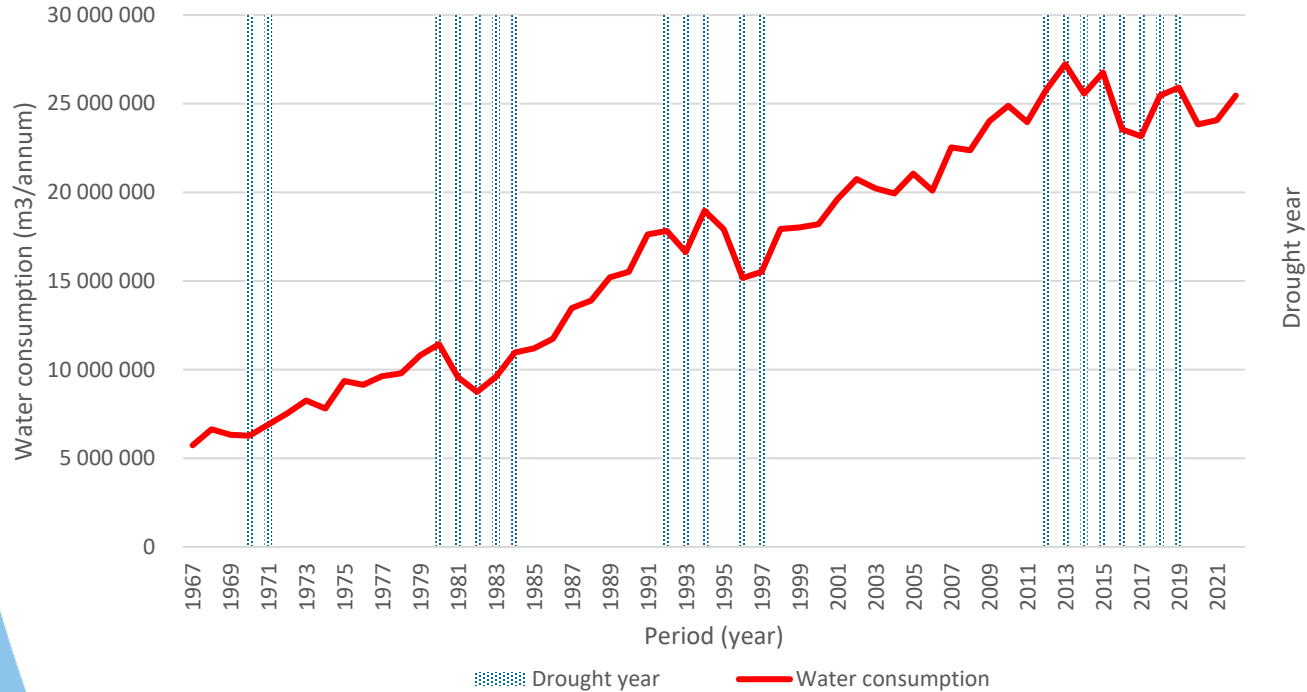


Every Drop Counts

Water demand/consumption by source



Water demand/Consumption



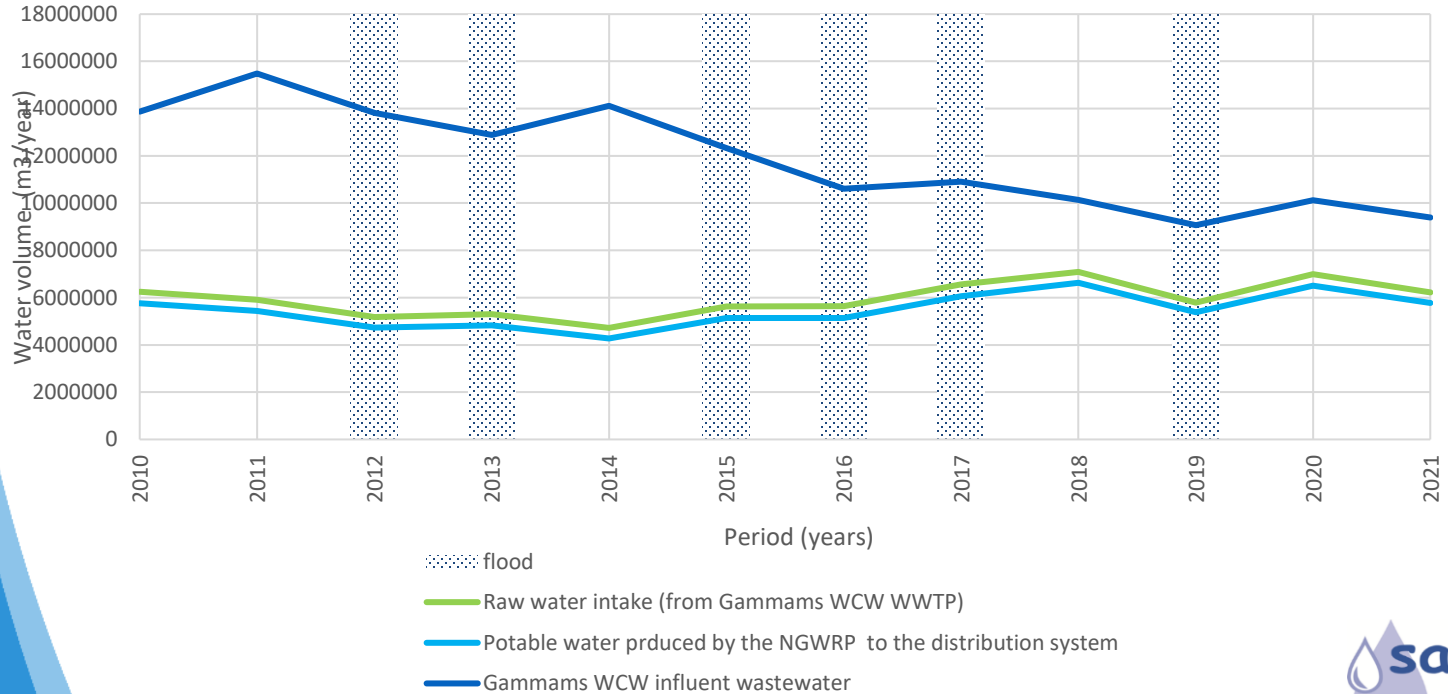
Drought year



Gammams WCW WWTP

- An activate sludge/trickling filter plant
- Commissioned in 1963
- Capacity: 25MLD
- Treatment of domestic sewage
- The biggest WWTP in Windhoek/Namibia
- The effluent serves as raw water used to feed a DPR plant

Gammams WCW WWTP influent volume vs Raw and product water of NGWRP



The way forward: water security

Water reuse is well known as the main alternative to reduce water demand/consumption (Abdel-shafy, & Mansour, 2020).

- Increasing of the reuse potential
 - DPR2 project was identified as one of the medium-term interventions
 - Additional upgrades are required at Gammams and Otjomuise WCW WWTP

Thank you for your attention!

Any Question?

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The Gateway to Endless Opportunities



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