

Short- and medium-term water
management challenges for the Central Area of Namibia:
Swakop Upper-Omatako Basin Integrated Water
Resource Management Plan

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Upper Swakop Basin Management Committee

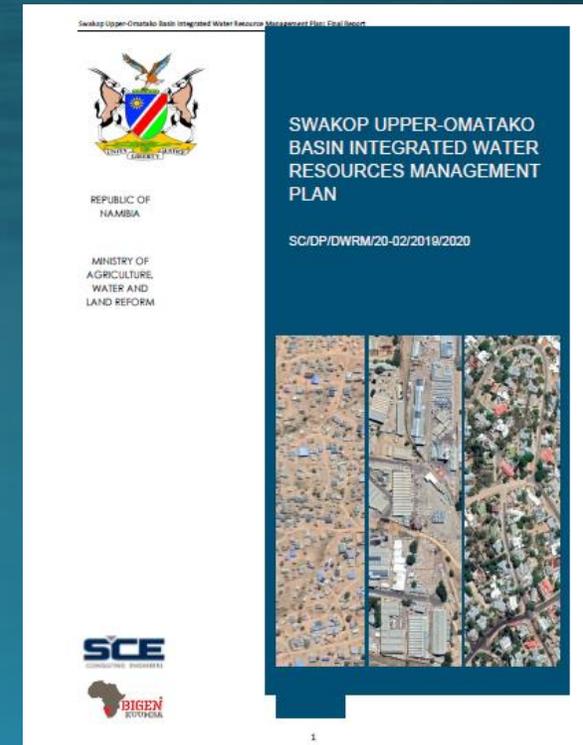
9 May 2023

Content

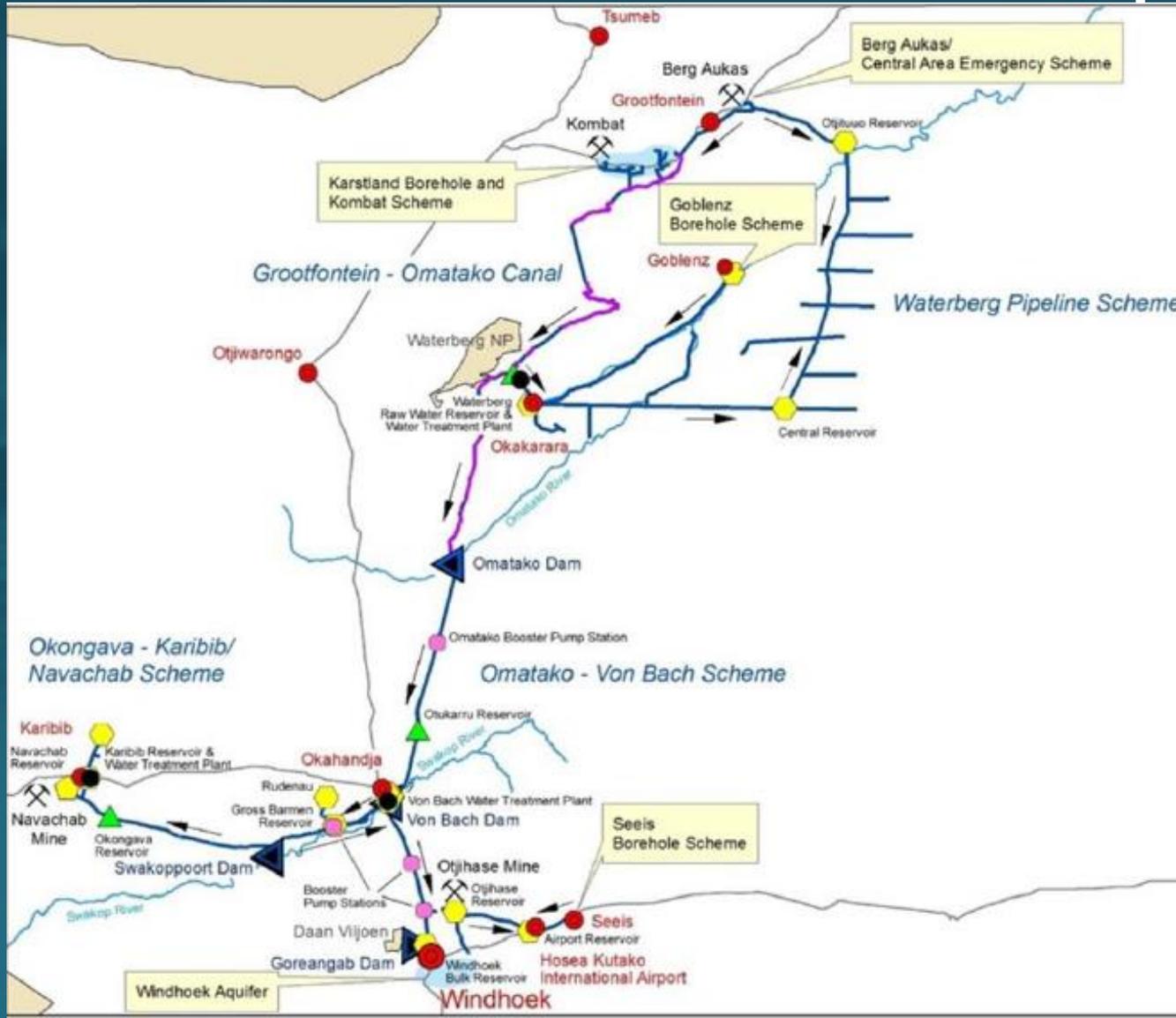
- IWRM Plan
- Current and future water resources
- Demand modelling
- Strategic Action Plan

IWRM Plan

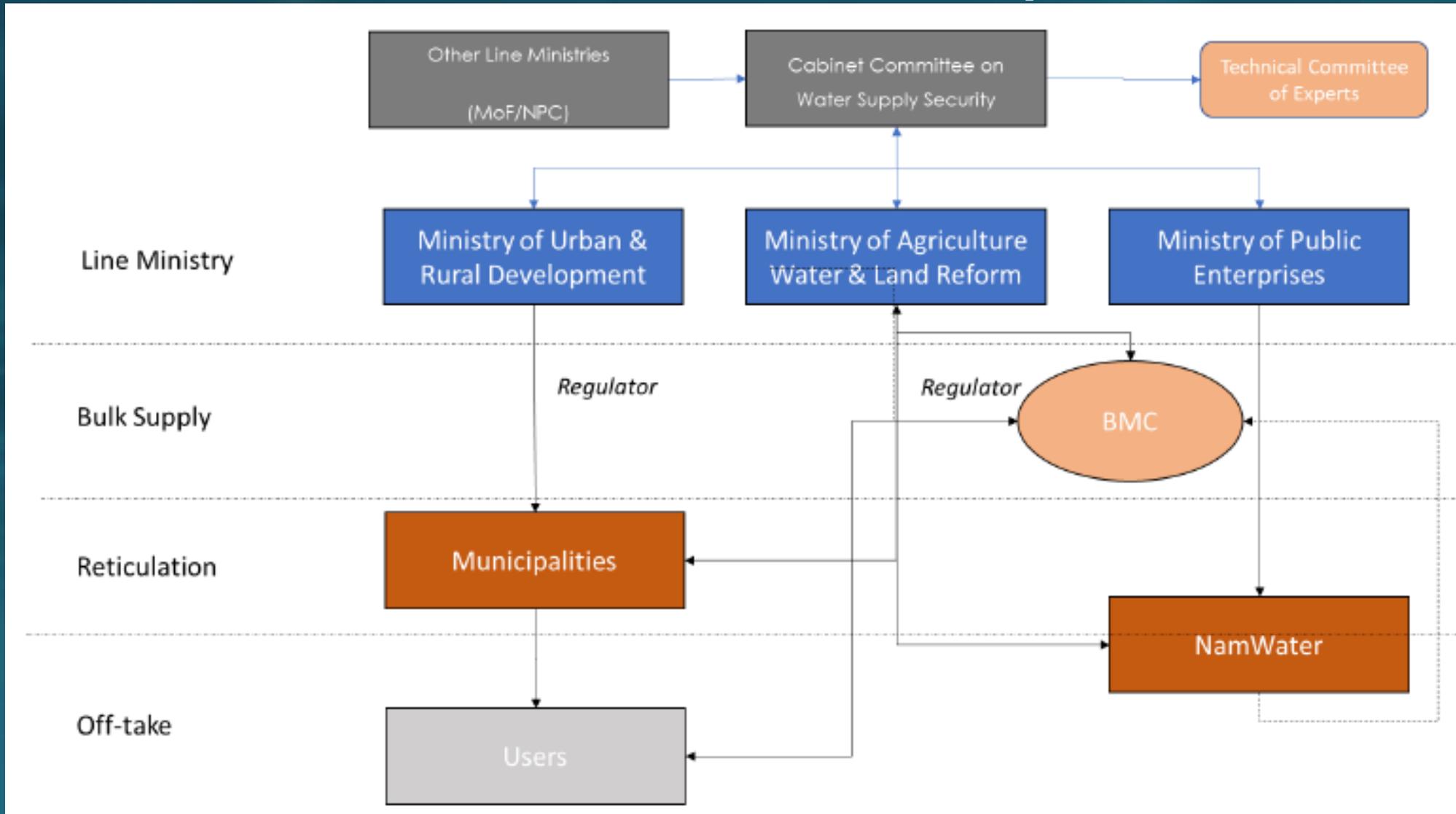
- Developed by SCE Consulting Engineers and Bigen Kuumba
- Published end of 2020
- Involved key stakeholder engagement
- Summary of current plans by NamWater and MAWLR
 - Current available water resources
 - Planned future water resources
- High level future demand modelling
- Strategic action plan
- USBMC to coordinate implementation



CAN current and future plans



CAN current and future plans



CAN current and future plans

- Augmentation => demand management, reuse and managed groundwater recharge, optimisation and efficiency of use
- Delaying major new capital cost: new bulk water source
- Focus on Public Private Partnerships



CAN current and future plans

- Short-term:
 - Emergency Water Infrastructure Plan
 - Kombat & Berg Aukas power supply upgrade
 - Omatako to Von Bach pump stations refurbishment
 - Abenab borehole development and linking to the ENWC
 - NamWater Bulk Supply Programme
 - Kombat Scheme upgrade
 - Kombat power supply upgrade
 - Von Bach dam sluices and other equipment rehabilitation
 - Investigation of medium-term supply alternatives
 - Consulting: new reservoir for Von Bach-Windhoek-Brakwater



CAN current and future plans

- Medium-term:
 - Implement all augmentation sources with a 2-5-year implementation period
 - Continuous improvement in water use efficiency & upgrades of current systems
 - Reducing water supply shortfalls in an 8-10-year period concurrent to long-term implementation

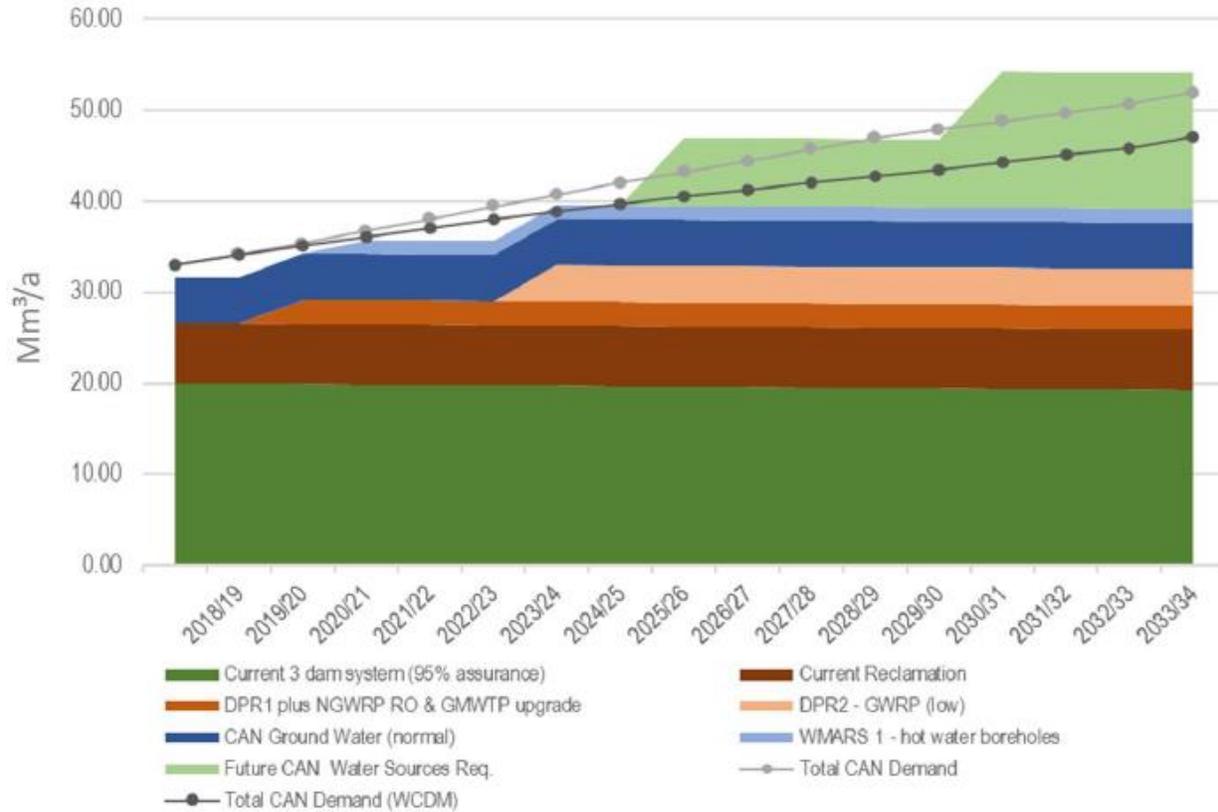


CAN current and future plans

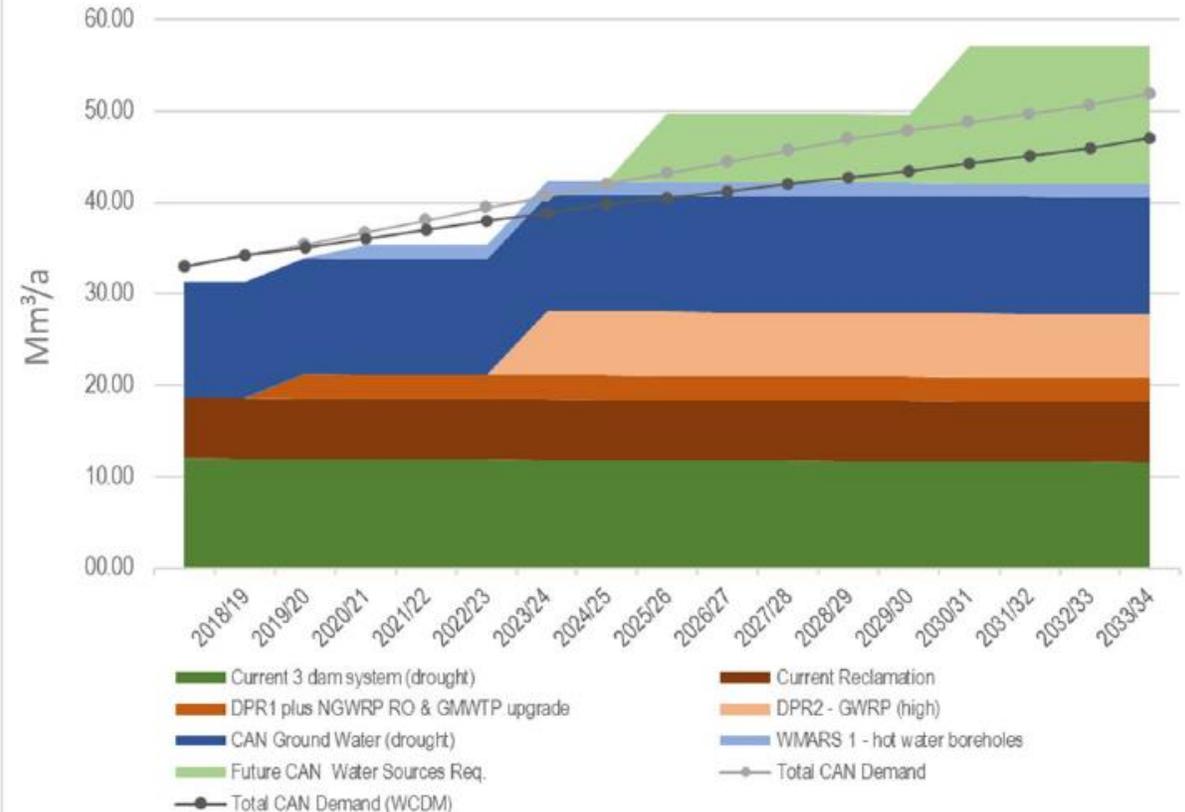
- Challenges:
 - **No clear or firm decision** as to which **long-term solution** preferred
 - The approval status of plans remains unclear
 - Several key plan documents not in the public domain
 - Lack of stakeholder participation in the preparation of technical plans
 - **Plans not explicitly linked to a resourcing/funding** framework
 - Apparent incoherent and *ad hoc* implementation framework => pay-as-you-go on budget availability
 - **External water source** needs to be in place **by 2022** => it is **unlikely** lead times can be met
 - **Emergency response framework** to the 2017/18 drought event => **not a sufficient solution** to the long-term challenge

Demand Modelling

SUO Basin Water Balance
Normal Conditions



SUO Basin Water Balance
Drought Conditions



Demand Modelling

- Current **water supply** system is **constrained**
- Margin of **safety/resilience is low**
- **Significant** medium/long-term **water security risk**



Demand Modelling

Typical examples of unconventional water strategies include:

- deep storage;
- international water sharing;
- virtual water;
- deep groundwater;
- artificial recharge;
- rainfall enhancement;
- rainwater capture;
- grey water harvesting;
- fog water;
- desalination;
- iceberg water harvesting;
- wastewater reuse; and
- water demand management.

- Management options – short-term:
 - Expansion of water reuse system
 - Improved quality of effluent discharged
 - Expansion of WMARS
- Management options – long-term:
 - **New** external source – Okavango / Desal
 - Complex operating rules – **strong management function** needed
 - Multi-stakeholder workgroup needed
 - Accurate real-time data and information needed
 - Real time water and salt balance needed – water quality concerns

Strategic Action Plan

Strategies Focus

An engaged community agenda

Operational excellence agenda

Sustainable finance agenda

Infrastructure agenda

Building Coalitions for Water Stewardship

Ensuring Healthy Water Institutions

Securing sustainable water management resources

Enabling Resilient Water Infrastructure

Action Areas

- Capacity Building
- Building a Water Alliance
- Policy forum
- Establish a Community Outreach Programme
 - Woman in Water
 - Urban Agriculture
- Water Awareness Programme
- Sponsorship

- Legislative and regulation review – “Implement the Act”
- Functional Water Regulator
- Customer relations and operational response system
- Transparent and Shared plans, programmes and budgets – bulk supply and distribution systems

- Tariff structure review
 - Minimum reinvestment thresholds
 - Economic tariff
 - Subsidy
- Capital funding and finance initiative
- Water investors conference
- Project preparation revolving fund establishment
- Administered cost and affordable infrastructure review

- Resolving long term bulk supply infrastructure solution in the public domain
- Effective pollution monitoring and control system
- Quality control and standards reinforcement
- Open defecation elimination
- Planned infrastructure maintenance

Thank you