Republic of Botswana

water affairs
Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

GOVERNANCE of GROUNDWATER RESOURCES IN TRANSBOUNDARY AQUIFERS (GGRETA)

Stampriet - Kalahari/Karoo Aquifer Case Study

igrac
International Groundwater Resources Assessment Centre

Swiss Agency for Development and Cooperation SDC

UNESCO
United Nations Educational, Scientific and Cultural Organization

International Hydrological Programme

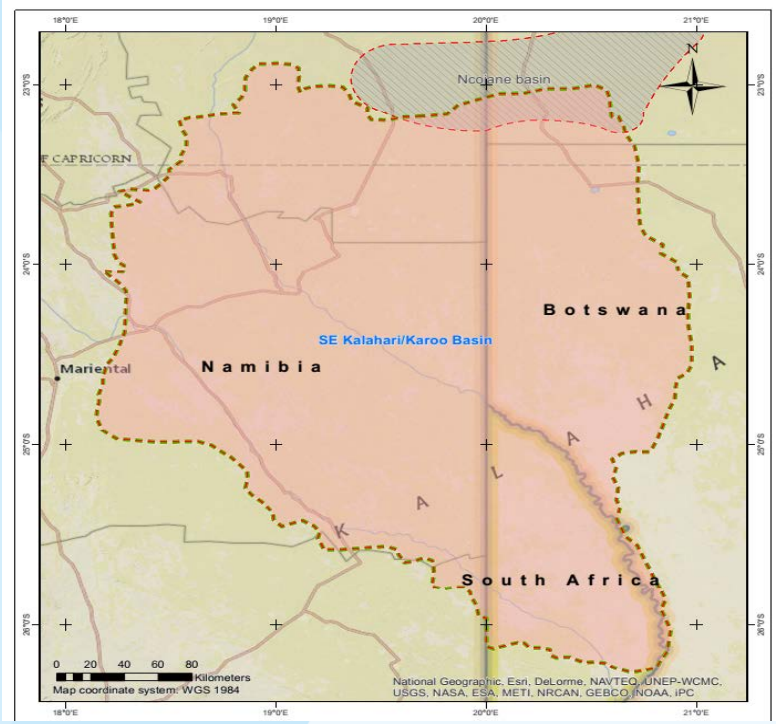
OUTLINE

- Background
- Project outputs and activites
- Partners and existing initiatives
- Transboundary Assessment
- Capacity Building
- Communication and Awareness
- Way Forward

WHY STAMPRIET?

- Is a strategic water resources for the 3 countries considering that the aquifer is located in a semi-arid to arid area

- It can be an asset for the socio-economic development of the region



BACKGROUND

- South –east Kalahari artesian basin
- Namibia: 71,000 km^2, Botswana: 70,000 km^2, South Africa: Unknown
- 2 Ephemeral rivers : Auob and Nossob
- 3 main aquifers: unconfined Kalahari (on top), Confined Auob and Nossob (underlying)
- Confined aquifers-Prince Albert Formation –Ecca Group-Karoo sequence
- Karstic sinkholes in NW –primary recharge mechanisms

- Recharge mainly known to take place in Namibia
- GW flows in NW-SE direction
- Average rainfall: 150-300mm/a
- ±20yrs major rainfall event' believed main source of recharge
- WQ: area known "Salt Block"
  - Only NE part of the Kalahari has good quality
  - Underlying Auob and Nossob saline; latter worst WQ
- Main uses:
  - Namibia: Irrigation & livestock watering
  - Botswana: Pastoral farming & domestic use

- Regional cooperation – 2000- through the Revised Protocol on Shared Watercourses in SADC.
- Of the 15 major river basins which are shared by two or more nations, 11 have Commission or Technical Committee.
- Resolution in 2007- AMCOW - to 'promote the institutionalisation of groundwater management by river basin organisations'.
- The Regional Strategic Action Plan for Integrated Water Resources Management plan of SADC (now in Phase III) and has included Groundwater as one of its components.
- UNESCO ISARM-SADC - 2007 to 2011- identified 29 TBA

STAMPRIET KALAHARI-KAROO PROJECT DESIGN & ACTIVITIES

Component 1:

Building recognition of the shared nature of the resource, and mutual trust through an assessment based on joint fact finding and science based diagnostics

- Output 1.1: Indicator-based assessment & diagnostic analysis
- Output 1.2: Information Management System (IMS)

Component 2:

Reaching consensus on transboundary governance mechanisms for transboundary groundwater management

- Output 2.1: Establishment of Multi-Country Consultative Body (CB)
- Output 2.2: Enhanced awareness of countries on the UNGA Resolution on the Law of TBA's

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TBA ASSESSMENT

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First Regional Meeting
22-24 October 2013, Windhoek, Namibia

THE FIRST CONSULTATION MECHANISM FOR A TRANSBOUNDARY AQUIFER OF THE SADC

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COMPONENT 1

- Builds on the GEF – UNESCO TWAP methodology for the assessment of TBAs,
- Encompasses hydrogeological, environmental, socio-economic and governance dimensions of the aquifer systems
- States in each TBA – agree - joint monitoring programme – harmonized i.t.o. classifications, reference systems, language, format, software, etc., and lead to the establishment of a common dynamic information system.

OUTPUT 1.1- ASSESSMENT

DONE:

Activities:

- **1.1.1. Elaboration of aquifer specific methodology**
  - Review of indicators and final decision on adopted set of indicators
  - Definition of data collection needs, and methodology for the Aquifer Characterization and Diagnostic Analysis, including questionnaires
  - Definition of new surveys (geophysical, remote sensing, etc.) possibly needed to fill information gaps
- **1.1.2 Assessment kick-off workshop**
  - To present a preliminary estimate of current state of data availability, quality, gaps, required harmonization, formatting, etc..
  - To agree on final set of indicators for the assessment, and the Aquifer Characterization and Diagnostic methodology
  - To define and adopt Questionnaires, and possible plan of new surveys

OUTPUT 1.1- ASSESSMENT

IN PROGRESS:

Activities:

- **1.1.3 Data and information collection and processing**
  - Collection and processing of existing data and information: Climate and hydrology; Hydrogeology; Environmental conditions (Quality/quantity); Socio-economic dimensions; existing policy instruments, regulations and laws, existing management practices including monitoring.
  - Fill data gaps, possibly by undertaking small field-surveys in the aquifer area

- **Technical review meeting (May 2014 in Windhoek)**
  - Evaluate the progress of data gathering activities, and level of data harmonization

OUTPUT 1.2- IMS

- Overall positive feedback on the proposed system
- User-friendly and target oriented funcionality
- Full ownership of data with the countries → data entry and use rights (authorization) to be defined by countries
- Design dynamic links with existing databases/archives at national level
- Data input formats to be prepared ahead of system development (if possible)
- Sustainability
  - IGRAC to design and build up the system
  - Foresee the possibility to transfer the system

COMPONENT 2

- Initiating the consultation process among countries,
- Facilitating the process of agreeing on priority issues, and
- Laying the foundations to establish cooperation mechanisms among countries.

OUTPUT 2.1- ESTABLISHMENT OF MULTI-COUNTRY CB

Consultative body with the mandate to facilitate information exchange among aquifer countries on aquifer resources management, established and operational

- **IN PROGRESS :**

Activities

- Review existing institutions/mechanisms & their mandate
- Analyze elements for technical and organizational synergy
- Define the operational manual

PROJECT TEAM

Namibia offered to host the regional coordination unit with the agreement of South Africa and Botswana

- Regional coordinator
- National focal persons in each country
- National experts from each country:
  - Hydrogeology
  - Environment and Socio-Economics
  - Legal and Institutional Frameworks

PARTNERS & EXISTING INITIATIVES

- *Build on existing initiatives, avoid overlaps → design activities to be complementary*
- Regional mechanisms: SADC, ORASECOM, AMCOW
- National activitities: DWA of BO, NA and SA, ...
- Multilateral cooperation: GEF, UNESCO-ISARM,...
- Bilateral cooperation: GIZ, BGR, JICA, ...
- NGOs, international associations, research institutes: NEPAD water centres of excellence, IWMI, GMISA, ...

→ *This list is far from being complete...*

CAPACITY BUILDING

- Focused on the needs of the project
- Long-term capacity development plan
- Skills and knowledge transfer from senior experts passed on to junior experts

COMMUNICATION & AWARENESS

- Detailed stakeholder analysis
- Adapt scientific results
- Local communication experts
- Media
- Inform different stakeholder groups:
  (i) at the beginning of the project,
  (ii) during the project and
  (iii) project main results
- Policy briefs for decision makers

WAY FORWARD

PHASE 2 ?

Setting up and operationalization

of a

STAMPRIET JOINT BODY

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THANK YOU!

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