
**GROUNDWATER RESOURCES
GOVERNANCE
in TRANSBOUNDARY AQUIFERS**
(GGRETA Project)



**Introduction to Regional Meeting on
Transboundary Aquifers**

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Meeting objectives and content

Objectives

- Raise awareness and promote transboundary aquifer management cooperation in Southern Africa,
- Share the results of the STAS assessment with a broader audience
- Receive suggestions on possible policy and institutional responses to the assessment and options for a STAS Multi-Country Consultation Mechanism (MCCM)
- Present and discuss options for cooperation between the three countries for the management of the STAS,
- Present the RAMOTSWA project objectives and current knowledge on the aquifer
- Agree on a plan for further work on the STAS and a joint work plan for the RAMOTSWA project

Meeting content 1 and 2

DAY 1: Opening presentations and discussions

Introduction to the GGRETA project, Stampriet case study and overview of the Stampriet Transboundary Aquifer System (STAS) integrated assessment findings

Presentation of the Ramotswa Transboundary Aquifer Project (RAMOTSWA)

Day 2: Parallel sessions:

Detailed presentation and discussion of the STAS assessment

Introduction to current knowledge on the Ramotswa Transboundary Aquifer Area (RTBAA)

Meeting content day 3 and 4

Day 3: Workshop in collaboration with the Stockholm International Water Institute (SIWI), focusing on water diplomacy and capacity building

Based on outcomes of previous UNESCO workshops on water diplomacy – From Potential Conflict to Cooperation Potential (PCCP)

Day 4: Workplans and linkages between the projects

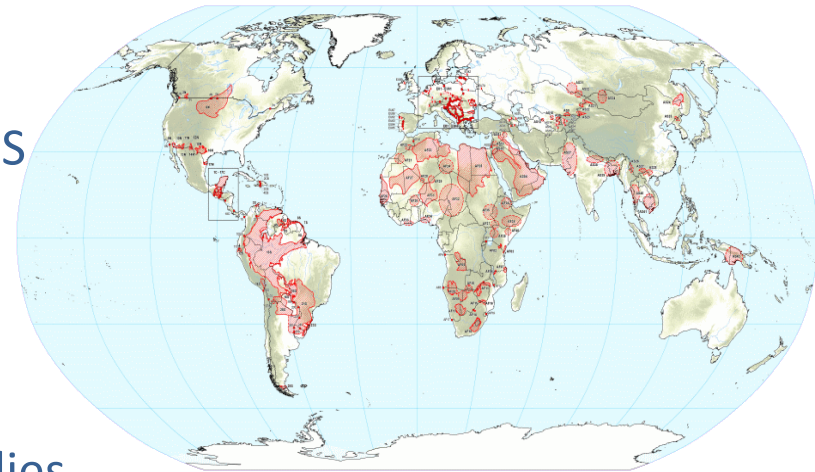
Prepare and agree on workplans for Stampriet project and RAMOTSWA Project

Discuss potential linkages between STAS integrated assessment and RAMOTSWA project

GGRETA project: Stampriet case study

UNESCO's leading role in transboundary GW governance

- ISARM \Rightarrow TWAP \Rightarrow GGRETA
- ISARM:
 - International Shared Aquifers Resources Management
 - Inventory of Transboundary Aquifers (TBAs)
- TWAP:
 - TB waters assessment program
 - Global assessment 166 TBAs & 43 SIDS
- GGRETA:
 - Groundwater Governance of Resources in Transboundary Aquifers
 - In-depth assessment of TBA case studies
 - Spatially differentiated info, maps



GGRETA project

- Objectives

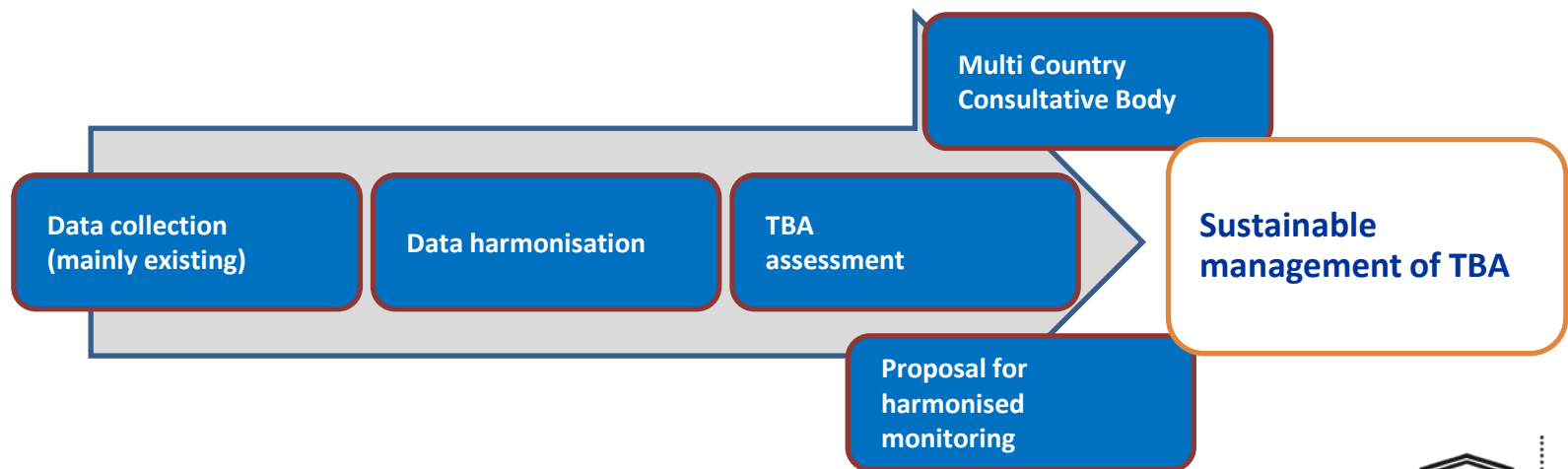
- Improve recognition of the importance and vulnerability of TBA's
- Strengthen cross border dialogue and cooperation
- Develop shared management tools
- Facilitate governance reforms to improve livelihoods, economic development and environmental sustainability

- Case Studies

- **Stampriet transboundary aquifer system (Botswana, Namibia, South Africa) – focus later in this presentation**
- Pre-Tashkent aquifer (Kazakhstan, Uzbekistan)
- Trifinio aquifer (El Salvador, Guatemala, Honduras)

GGRETA Two-step approach

1. Building recognition of the shared nature of the resource, and mutual trust through joint fact finding and science based diagnostics
2. Reaching consensus on transboundary consultation and governance mechanisms



Integration with WWAP Project on Gender Sensitive Water Monitoring

The UN WWAP UNESCO project

- will develop through 4 phases with the help of international experts in the Working Group on Gender Sensitive Water Monitoring Assessment and Reporting

- *WWAP is currently in PHASE I – Production of the Toolkit for gender sensitive water monitoring*

Preparatory work includes:

- identification and collection of data on a very limited number of generic indicators
- preparation of detailed work program related to gender, further data collection and surveys

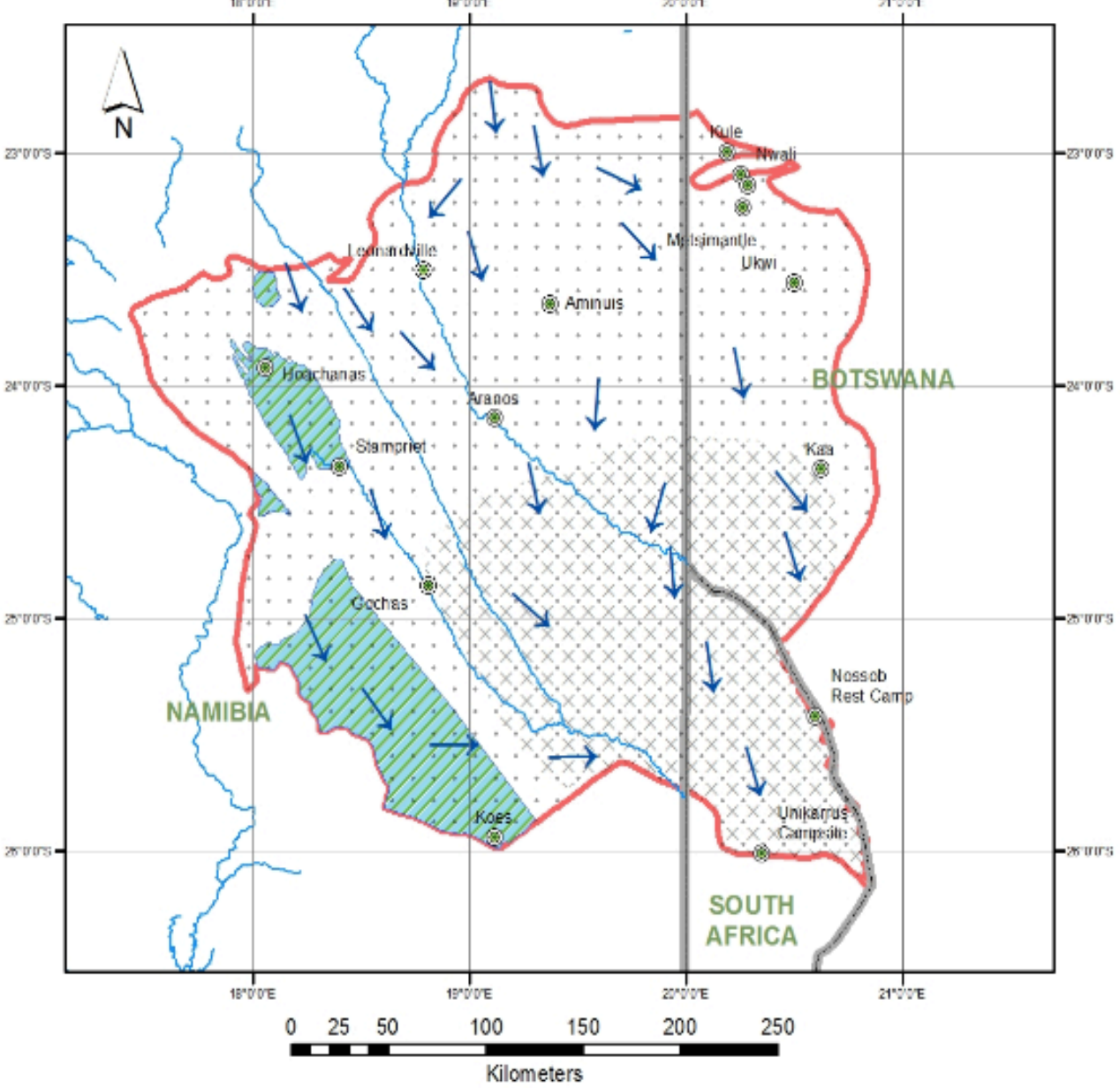
Integration
with
GGRETA
analysis

Integration of UNESCO's Potential Conflict Cooperation Potential (PCCP) program

- Progress towards TBA governance often requires lengthy trust building process
- **UNESCOs PCCP program provides tools to increase trust and cooperation**
- PCCP is being integrated with the Stampriet case study by:
 - Development of a Capacity and Skills Enhancement Toolkit for Hydro-diplomacy applied to TBA management
 - Training to enhance hydrodiplomacy capacities and skills:
 - Coordination of trust-building activities to nurture dialogue among stakeholders
 - Collection of related conflict/cooperation indicators

GROUNDWATER RESOURCES GOVERNANCE in TRANSBOUNDARY AQUIFERS (GGRETA Project)

Stampriet Transboundary Aquifer System Conceptual Model



- Legend**
- Villages and settlements
 - Groundwater flow
 - Rivers
 - Kalahari Recharge Area
 - Salt block - Discharge area
 - STAS Recharge area
 - National Boundaries
 - STAS Boundary

- Area 86000 km² Population 16000 in settlements (40000 total?)
- Rainfall 150-300mm year Temperature highly variable (1-37oC)



Key findings: Integrated assessment: Stampriet Transboundary Aquifer System (STAS)

- STAS is not heavily used at current levels of development – but level of sustainable use remains unclear
- Quality of GW worse in southern part of aquifer (salt block area)
- Local pollution of shallow aquifer(s)
- STAS may be at risk if large scale GW transfer, irrigation or mining development occurs
- Legal and institutional framework is adequate, but problems implementing national legislation
- Multicountry consultation mechanism (MCCM) options
 - Committee of national water authorities
 - ORASECOM geo-hydrology Committee

Risks and challenges

- The biggest potential risk to the STAS comes from possible large-scale irrigation or mining development. Current management challenges include:
- Data deficits especially time series data
 - Where data exists it is incomplete, poorly organized, difficult to retrieve
- Risk of local pollution around settlements
 - Pit latrines, oxidation ponds, waste dumps, poorly constructed and maintained bores
- Implementation of law and policy
 - Gaps in regulations, lack of capacity for inspection and controls

Next steps

- Completion of integrated aquifer assessment and options for multicountry consultation mechanism (MCCM)
- Further stakeholder consultation
- Final regional workshop
- Guidance towards a possible further stage of project

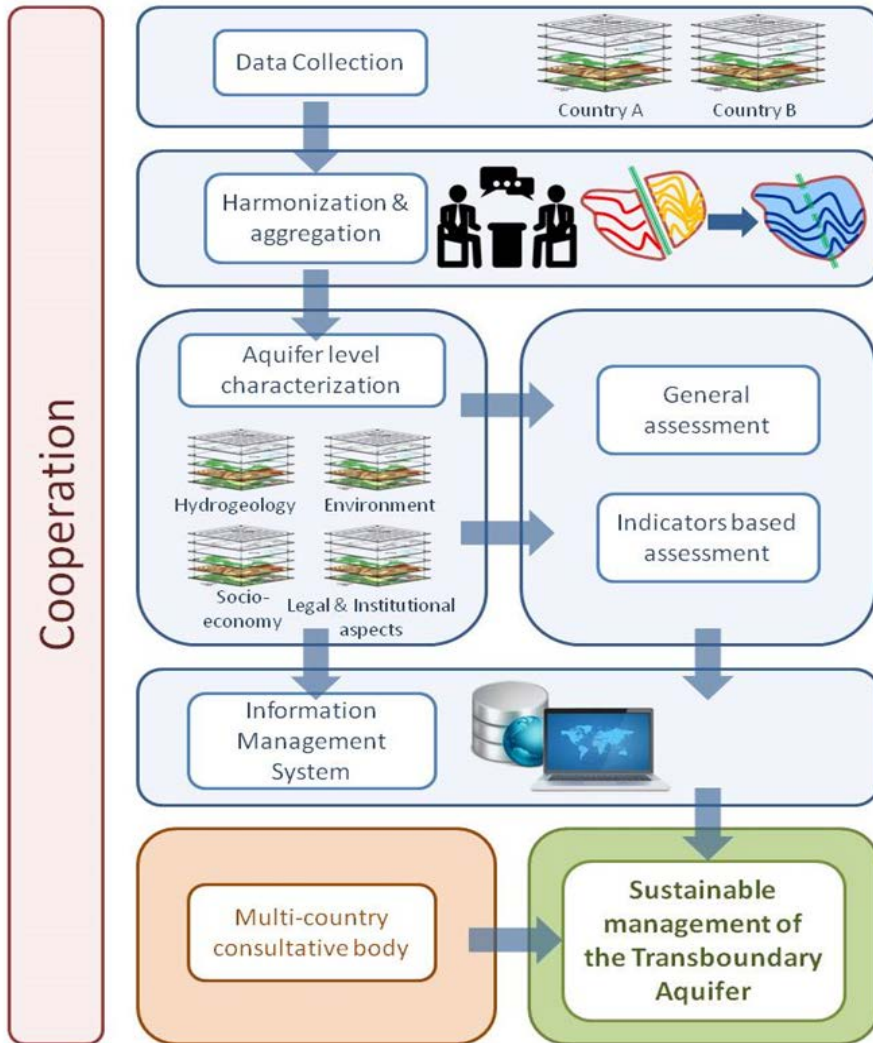
Thank you for your attention

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Project workflow and outputs

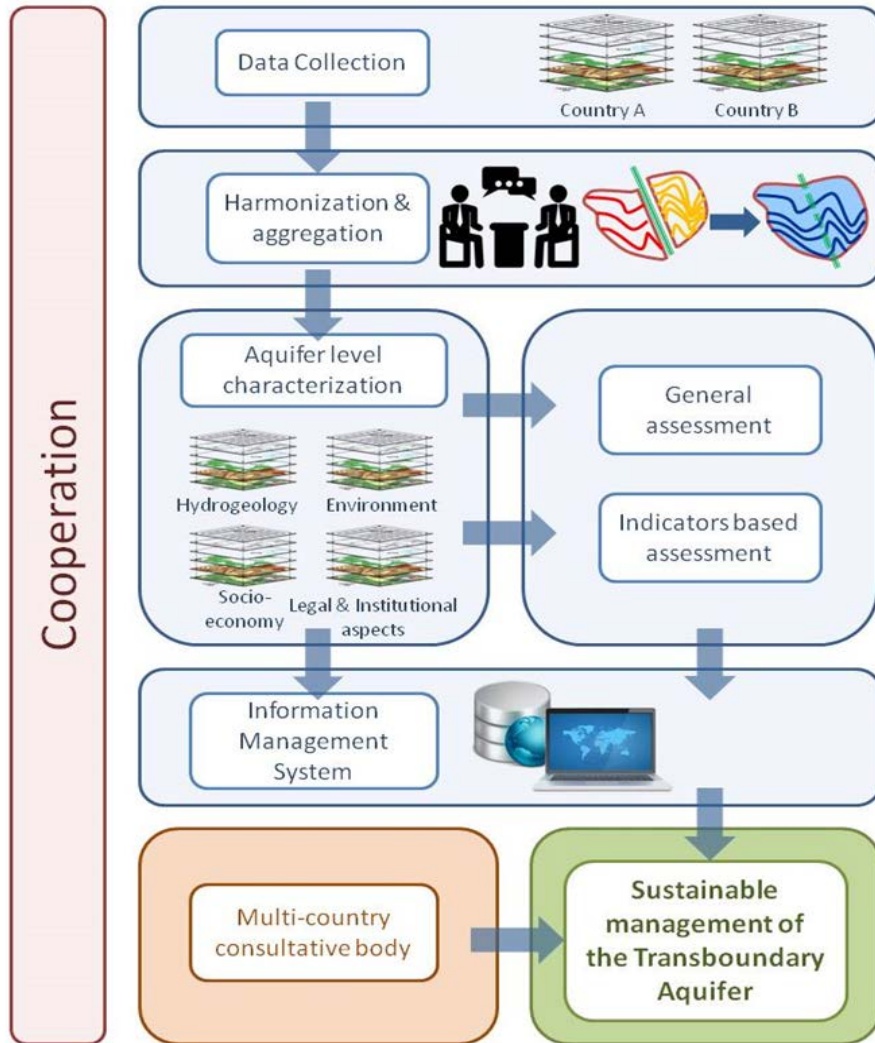


- Structured and harmonised data sets (excel tables)
- Thematic maps
- Overview tables and images
- Graphs (time dependent data)
- Conceptual model (cross-sections)
- Assessment report
- Program of action

Stampriet case study: Key activities and milestones

	2014		2015	
	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4
Activities	Recruitment of national technical teams Data collection & processing	Data collection, processing & harmonization	Integrated aquifer assessment, Management issues, policy implications	Stakeholder consultation. Development of proposal for MOCM
Meetings	Regional technical seminar (May 2014)	Mission to Botswana Namibia and South Africa (Aug 2014) Second regional technical meeting (Oct 2014)	Technical workshop (Feb 2015) Third regional technical meeting (May 2015) International water law training, PCCP workshop (May 2015)	Stakeholder consultation meetings Final regional meeting (Oct 2015)
Outputs	Training of national technical teams in project methodology	Reports on national data Reports on harmonized data and indicators	Continuing assessment of national data. Data uploaded into IMS Reports on integrated aquifer assessment	Proposal for multicountry consultative body Final project reports & evaluation.

Project workflow and outputs



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Conceptual model (cross-sections)

Assessment report
Program of action