



FIRST ANNOUNCEMENT AND CALL FOR ABSTRACTS

GROUNDWATER:
MAKING THE INVISIBLE VISIBLE FOR
SOCIO-ECONOMIC DEVELOPMENT



GROUNDWATER MANAGEMENT INSTITUTE

5th

SADC GROUNDWATER CONFERENCE

16 – 18 NOVEMBER 2022

WINDHOEK,
NAMIBIA





We invite you to submit both oral and poster abstracts for the upcoming 5th annual Southern African Development Community (SADC) groundwater conference hosted by the SADC Groundwater Management Institute (SADC-GMI). The conference is held annually, with the primary objective of providing a platform for advancing knowledge sharing on sustainable groundwater management at national and transboundary levels across the SADC Member States.

The conference will be held Wednesday, 16 November - Friday, 18 November, in Windhoek, Namibia, under the patronage of the Ministry of Agriculture, Water, Land and Reform. We are very excited to meet again in person. When submitting an abstract, please note that we plan to make this a hybrid in-person/virtual event to accommodate presenter and attendee needs.

We are looking for cutting-edge best practices and presentations addressing the theme and sub-themes listed below. However, all presentation topics are welcome that advance our groundwater knowledge.

Please direct all enquiries to thokozani@sadc-gmi.org.



BACKGROUND

Groundwater contributes to poverty alleviation, food security, water resilience, and sustaining ecosystems, especially in light of the impacts of climate change. Nonetheless, the role of groundwater is often not adequately acknowledged at all levels of society, thus leading to unsustainable utilisation of the resource and a limited ability of communities to draw maximum benefits from groundwater. With increasing water scarcity throughout many parts of the world, water resource managers can no longer overlook the potential of groundwater for water security and contribution to overcoming acute poverty. Therefore, the 5th SADC groundwater conference seeks to discuss ways of enhancing the contribution of groundwater

sustainability and ecosystem services to socio-economic development and climate change adaptation, especially in the SADC region, which has many challenges, requiring multi-dimensional solutions to address the many deficiencies at the household level in health, education and standard of living.

The conference intends to deliberate on groundwater's role in providing and sustaining ecosystem services, groundwater-dependent ecosystems (GDEs) contribution to livelihoods, achieving the Sustainable Development Goals (SDGs) and enhancing access to water by strengthening the governance framework. Lastly, the conference plans to discuss the linkages between groundwater assessments, e.g. modelling and how these can inform groundwater infrastructures, such as Managed Aquifer Recharge (MAR) schemes, bulk water supply infrastructure for agriculture and water services, and use in urban centres. The conference expects to pass on its main messages to the Groundwater Summit in Paris in December 2022 and the UN-Water Conference in New York in March 2023.

The conference modalities include high-level plenary sessions focusing on the theme and sub-themes, technical presentations, and panel discussions led by the partners of the SADC-GMI.

Partners and Stakeholders wishing to run special sessions and panel discussions under the sponsorship program are requested to submit an expression of interest by 31 July 2022 and programme in line with the conference's theme by 31 October 2022.



GROUNDWATER: MAKING THE INVISIBLE VISIBLE FOR SOCIO-ECONOMIC DEVELOPMENT

The conference is organised into four sub-themes to support the central theme:

SUB-THEME 1

Groundwater as a catalyst for attaining SDGs

The United Nations (UN) Sustainable Development Goals (SDGs) present an agenda to reduce hunger and poverty whilst protecting the environment. As the 2019 edition of the SADC Groundwater Conference has shown, groundwater is key to achieving SDG 6 and several other SDGs. Yet, groundwater is not always captured adequately in formulating SDG indicators. For instance, the water stress indicator (6.4.2) does not differentiate groundwater from surface water. Indicator 6.6.1 on water-related ecosystems does not distinguish ecosystems depending on groundwater (GDEs).

Moreover, there are important groundwater data collection issues, including in SADC member states, resulting in a low level of reporting on some key indicators, for instance, the one addressing the quality of groundwater resources (6.3.2). Reporting on transboundary groundwater cooperation (Indicator 6.5.2) appears to be reasonably good in SADC, although there are inconsistencies between the reports submitted by riparian states. The weak formulation of groundwater indicators in the SDGs, data gaps and other reporting challenges call for improvements. It might require developing additional sub-indicators, enhancing groundwater data collec-

tion in SADC, technical assistance for completing the reports, or further coordination between member states when reporting on transboundary groundwater cooperation requires the inclusion of additional indicators and modification of data collection protocols.

Meeting the SDGs and national development objectives requires stable legal frameworks to enable governments and groundwater users to plan for resource management over the long term and deal with competing interests, including those of the environment and future generations. In most national institutional arrangements and transboundary agreements, groundwater is less conspicuous, resulting in sub-optimal interventions. Transboundary groundwater issues identified by the SADC Member States include weak institutional frameworks, limited functioning of RBOs concerning groundwater management, and limited scientific data sharing between countries. Under this sub-theme, we intend to deliberate on the reporting on groundwater resources under the SDGs and identify means of improvement so that the progress towards sustainable groundwater management in SADC member states can be adequately and accurately measured. The conference plans to discuss progress towards addressing gaps in policy, legal and institutional considerations amongst the SADC- Member States, and the government interventions required to attain SDGs from a groundwater perspective.

Issues to be covered under this sub-theme include:

- Discussing the status of SDG-6 (especially 6.3.2, 6.4.2, 6.5.2 and 6.6.1) reporting in the SADC member states – special session
- Understanding the status of TDA and SAP implementation in TBAs
- Deliberating on mechanisms to strengthen Gender Equality and Social Inclusion (GESI) in TDA and SAP processes
- Progress towards addressing gaps in policy, legal and institutional arrangements for groundwater management amongst the SADC- Member States (including addressing GESI projects)
- Showcasing local-scale groundwater interventions toward meeting the SDGs and national development planning goals

methodological issues, water resource managers rarely address groundwater contribution to surface water resources and hardly consider GDEs. Our knowledge of the implications of climate change on groundwater-dependent ecosystems, interconnected food webs, and the cycling of organic matter, and their response to global warming is minimal. The groundwater interaction process requires accounting in environmental flow assessments and management actions. This sub-theme intends to explore methods for baseflow separation, understand water requirements of inter-connected surface and GDEs, and delineate terrestrial GDEs and the management implications for conjunctive management in a transboundary context.

Issues to be covered under this sub-theme include:

- Understanding groundwater-surface water interaction processes and methods for baseflow separation
- Deliberating on GDEs and their related ecosystem services (i.e., storing and providing water resources, attenuating contaminants/floods, CO₂ storage, and controlling disease) and potential hazards such as groundwater depletion, climate change and land-use changes
- Discussing GIS, remote-sensed and field-based methods for delineating and validating GDEs
- Showcasing effective downscaling techniques and dealing with uncertainty between large-scale global or regional models and small-or scale hydrological processes for conjunctive management of water resources
- Discussing the valuation of GDEs from a social, economic and environmental perspective (pricing the preservation and loss of GDEs)

SUB-THEME 2

Groundwater and ecosystem services

The exchange between groundwater and surface waters is critical for water quality, quantity, and ecological functionality. As groundwater inflows buffer the adverse impacts of climate change, these groundwater-influenced streams and wetlands become refugia for GDEs. GDEs provide services that are of societal, economic and environmental value, such as the: i) purification of water and its storage in good quality for decades and centuries, ii) active biodegradation of anthropogenic contaminants and inactivation and elimination of pathogens, iii) nutrient recycling, and iv) mitigation of floods and droughts, and v) sequestration and storage of carbon dioxide, e.g. in moorlands. However, due to

SUB-THEME 3

Groundwater and livelihoods

As water resource custodians, governments of SADC must ensure equitable groundwater resource allocation and that the resource remains available for future generations. This requires critical recognition of linkages between GDEs and human livelihoods and well-being that depend on these ecosystems, which requires a complementary suite of policy, legislative, regulatory, financial, scientific, and cultural measures (including indigenous knowledge) to ensure effective delivery and beneficial outcomes. Many transboundary communities rely on groundwater and GDEs for their livelihoods. Alluvial aquifers or sand rivers are common SADC dryland regions, often providing a water source where more conventional sources are unavailable. These aquifers are often closely associated with surface water flows and can maintain river flow during low flow conditions, especially during the dry season. During the rainy season, the opposite takes place. The rivers usually recharge these alluvial aquifers. These shallow groundwater resources are particularly suitable for small-scale farmers since access costs are relatively low. However, over-abstraction from the river or the alluvial aquifers and land-use activities may negatively impact neighbouring countries and borderland communities. Borderland communities are vulnerable commu-

nities and, in some cases, forgotten communities comprising larger percentages of women, youth, aged, internally displaced people, and refugees subject to water shocks and stressors - drought, flooding, disease, water shortages, food shortages, pests, state collapse or crisis. This sub-theme intends to explore the role of groundwater and dependent ecosystems in livelihoods in transboundary aquifers (TBAs) and other settings.

Issues to be covered under this sub-theme include:

- Considering approaches to implement community monitoring of groundwater and related GDEs (including groundwater level and discharge monitoring)
- Comprehending community perspectives and indigenous knowledge systems on socio-ecological stressors, causes and solutions
- Deliberating on actions to strengthen Gender Equality and Social Inclusion (GESI) considerations for utilising groundwater and dependent ecosystems in livelihood diversification
- Addressing gaps in governance and management regimes that balance livelihood diversification, e.g. groundwater irrigation intensification and ecological resilience
- Evaluation of economic benefit of farmers if groundwater resources are made available for irrigation purposes (socio-economic modelling)

SUB-THEME 4

Resilient groundwater infrastructure innovations for socio-economic development and rural and urban water security

This sub-theme continues from the previous conference as resilient groundwater infrastructure innovations are crucial for economic growth and development. The linkage between the classic hydrogeological investigations and the resultant infrastructure is often not well pronounced. This sub-theme addresses the need to move from science to resource-optimised infrastructure interventions incorporating groundwater-based natural infrastructure solutions. Several measures exist to support water resilience, such as conjunctive management of water resources, MAR, and (ground)water reuse and recycling. Infrastructure and conveyance play a crucial role in determining the relative advantages of any proposed groundwater solutions. A blend of green and grey infrastructure and related integrated interventions provides the most effective and efficient solutions in particular cases. Implementing the groundwater-based solutions requires linkage to infrastructure planning and decisions undertaken by public works.

Issues to be covered under this sub-theme include:

- Showcasing groundwater-based natural infrastructure solutions to provide access to safe drinking water
- Innovative approaches to financing groundwater management – special session
- Discussing well-optimisation techniques and models taking into account resource and water quality constraints
- Deliberating incorporation of groundwater systems in water plans of local municipalities and at critical facilities
- Reflecting on environmental and social safeguards to minimise any potential undesirable environmental and social impacts of infrastructure development
- Discussing interaction of urban supply and sanitation infrastructure on urban aquifers, e.g. leakage, flooding, pollution, draining etc.



Conference Chairperson
Eng. James Sauramba
(Executive Director SADC-GMI)

SUBMISSION OF ABSTRACTS

Authors are invited to submit abstracts for both oral and poster presentations for the sub-themes outlined above. Authors are requested to indicate the sub-theme for which they are making submissions.

Deadline: 31 August 2022

ABSTRACT SPECIFICATIONS

The conference uses the EasyChair conference platform for abstract submissions. We request authors to:

- Have a short title (concise and informative) that adequately captures the scope of the presentation
- Authors are discouraged from using excessively long titles
- Be written in English, French or Portuguese
- Indicate the authors of the abstract and their affiliations with the corresponding author, clearly marked and contact details provided
- Provide the main results, the main conclusion, statement of the problem, objectives, methods, and results
- Avoid using abbreviations
- Be a maximum of 300 words
- Provide keywords for the abstract (up to 5)


Abstracts will be peer-reviewed by the Technical Committee comprising representatives from Universities, International institutions and National Governments. In addition, peer-reviewed proceedings of the conference will be published after the conference.



SUBMISSION OF ABSTRACTS

The Technical Committee reserves the right to reject or accept an abstract. By submitting an abstract, the authors commit that the presenting author registers before 15 October 2022.

To submit an abstract, follow the instructions below:

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- i. Click on this link:
<https://easychair.org/conferences/?conf=sadcgroundwaterconfe0>
 - ii. If you do not have an EasyChair account, please create one as directed
 - iii. When logged in, enter as an author
 - iv. Follow instructions on filling out the form (making sure you paste the abstract in the space provided and also uploading the file as a pdf)
 - v. After submitting your abstract, you will receive an email acknowledging receipt of the abstract.





IMPORTANT DATES

Submission deadline for abstracts: 31 August 2022

Notification of abstract acceptance: 30 September 2022

Confirmation by authors and presenting authors registration: 15 October 2022

Final Program: 31 October 2022

Conference run: 16, 17 and 18 November 2022





REGISTRATION COSTS

Early bird conference registration: 15 October 2022
 Physical conference attendance: R 2 000
 Online conference attendance: R500

Late conference registration on:

Physical conference attendance: R 3 000
 Online conference attendance: R750

Online registration can be done on

<https://conference.sadc-gmi.org/conference-registration/?id=64>

Young Professionals & Students Under 35 yrs



PAYMENT DETAILS

Payments are to be made through the account below:

Name of the Bank:	Standard Bank
Name of the account holder:	SADC-GMI
Account number:	421376031
Account type:	BIZLAUNCH
Branch:	Brandwag
Branch code:	055534
Branch code (electronic payments)	051001
SWIFT address:	SBZA ZA JJ

Send the proof of payment to tebog.poo@sadc-gmi.org after you have made your payment





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