

Paper Number: 5516

Towards Integrated Transboundary Groundwater Management in Southern Africa - The Case of the Ramotswa Aquifer Shared between South Africa and Botswana

Y. Altchenko^{1,2,3}, K.G. Villholth⁴, N. Lefore⁴, G. Ebrahim⁴, M. Hanjra⁴, G.J. Nijsten⁵, A. Genco⁶, P. Kenabatho⁷, B. Mosetlhi⁷, H. Masundire⁸, T. Moyo⁹, M. Gomo¹⁰, S. Mndaweni¹¹, N. I. tobani¹², K. Keetile¹³

¹ International Water Management Institute (IWMI), 141 Cresswell Street, Weavind Park, 0184, Pretoria, South Africa, y.altchenko@cgiar.org

²Ministère de l'Agriculture, de l'Agroalimentaire et de la Forêt, Paris, France

³Laboratoire METIS, UMR 7619 UPMC/CNRS, Université Pierre et Marie Curie, Paris, France

⁴ International Water Management Institute (IWMI), Pretoria, South Africa

⁵ International Groundwater Resources Assessment Centre (IGRAC), Delft, the Netherlands

⁶ XRI, Golden, Colorado, USA

⁷ Dept. of Environ. Sci., Univ. of Botswana, Botswana

⁸ Biol. Sci., Univ. of Botswana, Botswana

⁹ Postgraduate School of Agriculture & Rural Development, Univ. of Pretoria, Pretoria, South Africa

¹⁰ Inst. for Groundwater Studies (IGS), Univ. of the Free State, Bloemfontein, South Africa

¹¹ Dept. of Water and Sanitation, Directorate: Water Resource Planning Systems, Pretoria, South Africa

¹² Botswana Geoscience Institute (formerly Dept. Of Geological Survey), Lobatse, Botswana

¹³ Department of Water Affairs, Gaborone, Botswana

Water is essential to economic development, resilience of ecosystems, biodiversity conservation, and human health and welfare in the Limpopo River Basin. Linked to the surface water resources of the Basin, major internationally shared groundwater reserves exist in the region that could support sustainable development, drought and flood resilience, urban expansion as well as small-scale agriculture if properly and conjunctively developed, shared, recharged, and managed as part of ongoing joint collaboration between the states.

The Resilience in the Limpopo Basin: the Potential Role of the Transboundary Ramotswa Aquifer (RAMOTSWA) project focuses on one of the most important shared aquifers in the Limpopo Basin – the Ramotswa Aquifer. The project supports equitable access to water that balances urban and rural needs with ecosystem requirements under a changing climate and a growing demography to reduce climate vulnerability of both population and ecosystems by promoting adaptation strategies for integrated, transboundary water resources management and by building the management capacity of river basin organizations, national authorities and local communities.

Through a multidisciplinary methodology with multi-stakeholder involvement and a transboundary diagnostic analysis including socio-economical and hydrogeological studies, the project intends, in particular, to (1) improve the understanding of the socioeconomic importance of the aquifer area and the inequalities in water security across the population, (2) improve the knowledge of the extent of the transboundary aquifer resources and the hydrogeology by conducting an airborne survey, (3) develop tools for shared and harmonized management and monitoring of the groundwater resources (Joint Information Management System) and (4) develop human and institutional capacity for shared and harmonized sustainable management.

The presentation introduces the multidisciplinary approach of the project, to highlight the challenges faced and to present the results and outcomes of the socio-economical and hydrogeological baseline assessment.

Keywords: Groundwater, transboundary aquifer, South Africa, Botswana, multi-disciplinary assessment

