

Jude Edmund Cobbing

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Jude is a hydrologist with 25+ years of experience in the public, research, non-profit and private sectors. His interests include groundwater resource assessment, water for food security, water management policy, water quality, agricultural water use, water strategy development, transdisciplinary research, and the institutions needed for resilient food security systems. His work links water governance to food security, poverty reduction, drought, economic growth, energy, rural livelihoods, and climate resilience. Jude has worked in Africa, Asia, North America, and Europe, and in the mining and power sectors, in rural and domestic water supplies, and on climate change. He is a skilled team worker, researcher, manager, report writer, mentor, and communicator.

Education

PhD	<i>Groundwater governance</i>	Nelson Mandela University, South Africa	2017
MSc	<i>Hydrogeology</i>	University College, London	2000
PGCE	<i>Science and English</i>	University of South Africa	1999
BSc	<i>Geology and English</i>	University of Cape Town	1994

Career Summary

June 2024 to present: Senior Program Manager, Robert B. Daugherty Water for Food Global Institute at the University of Nebraska at Lincoln

- Jude provides provide scientific leadership for research aligned with the mission of the Daugherty Water for Food Global Institute (DWFI), with a focus on the global south, Nebraska, and the Midwest. He is responsible for building and sustaining strong networks with scientists, development professionals, industry partners, and other stakeholders. This includes fostering interdisciplinary collaborations and cultivating strategic partnerships with stakeholders, agencies, and industry to enhance research impact. Jude also oversees day-to-day program operations, including research planning, budgeting, performance monitoring, and reporting.

October 2020 to May 2024: Advisor, Integrated Water Resource Management, Save the Children USA

- Member of Save the Children's PRO-WASH & SCALE team in Washington DC, USA, supporting USAID-funded WASH interventions through capacity strengthening, knowledge-sharing and applied research in Africa, Asia and the Caribbean. This work covers USAID Early Recovery, Risk Reduction, and Resilience (ER4) projects, and Emergency projects. Jude has led research into Multiple-Use Water Systems, developed training courses, convened webinars, written reports and guides, and collaborated on numerous inter-disciplinary projects in support of sustainable development

May 2017 to September 2020: Consulting hydrologist, Washington DC, USA

- Assessed Volumetric Water Benefit Accounting for the international non-profit WaterAid, focusing on its alignment with WaterAid's corporate and private-sector engagement strategy
- Analyzed the World Bank Group's PPCR Climate Fund and its impact on the water sector
- Conducted research for the World Bank Group on African groundwater resources and associated political-economic context, co-author of final World Bank report on African groundwater resources
- Provided expert advice to WaterAid operations in Africa and Asia, and to Wegis and Young (a large Californian LLC) on irrigation investments in North Africa

March 2015 to April 2017: Consulting hydrogeologist and PhD student, Washington DC, USA

- Completed PhD in groundwater governance ("*The Grootfontein aquifer at Mahikeng, South Africa as a hydrosocial system*"), and published four first-author journal articles on this research
- Water governance researcher for the South African Water Research Commission, focusing on Water User Associations and on the operation and maintenance (O&M) of water supply systems
- Expert consultant to the South African Department of Water Affairs on groundwater component of the national water monitoring strategy, including mentoring / training of Water Affairs staff

June 2010 to February 2015: Groundwater team leader, SLR Consulting, Johannesburg, South Africa

- Led a team of hydrogeologists working on water resources and environmental impact assessments in five African countries (Botswana, DR Congo, Madagascar, South Africa, Tanzania)
- Presented research at international conferences in China and South Africa
- Developed in-house capacity in groundwater modeling, acid-base accounting and GIS
- Secured more than \$500 000 in new business, developed new client relationships
- Conducted PhD research (part-time) in water supply and groundwater governance

August 2007 to June 2010: Senior hydrogeologist, Water Geosciences Consulting, Pretoria, South Africa

- Helped grow this start-up into a successful regional environmental consulting business
- Wrote numerous successful project proposals, including winning the contract to develop the first hydrogeology map of the SADC region of south and central Africa
- Wrote major parts of the South African National Groundwater Strategy, and commissioned economic section on the cost of delaying implementation of the strategy

June 2005 to June 2007: Hydrogeologist, Council for Scientific and Industrial Research, Pretoria, S. Africa

- Conducted research into priority environmental issues, including acid mine drainage
- Secured finance for and led development of the SADC groundwater grey database, a free-to-access internet repository for scarce and out-of-print reports and data on African groundwater
- Published the first journal article ever written on hydrofracturing water boreholes in Scotland

November 2000 to March 2005: Hydrogeologist, British Geological Survey, Wallingford, England

- Determined aquifer properties and baseline groundwater conditions in the UK and Northern Ireland
- Developed expertise in down-hole geophysical logging, packer testing and specialist water sampling
- Developed and presented groundwater training courses in Malawi and Nigeria
- Conducted research into water supply sustainability (quality and quantity) in rural Ghana

May 1996 to September 2000: Teacher, book shop manager and M.Sc. student, London, England

- Completed Certificate in Higher Education, and taught science in high schools in England
- Came first in class in MSc in hydrogeology at UCL, one of the world's top ten universities, and completed a Master's thesis on arsenic geochemistry and distribution in Bangladesh

- Branch manager of Stanford's Map and Travel Book Shop in London

March 1995 to April 1996: Rural Water Resources Project Manager, Eastern Cape, South Africa

- Ran rural branch of non-profit Lima Community Development Organization providing water and agricultural extension services to poor South Africans in a rural part of the Eastern Cape Province
- Developed innovative spring protection designs / construction techniques, learned to dig trenches, repair water tanks, mix cement, lay bricks, and live without electricity and running water

Professional Registrations and Memberships

- Member of the United States National Ground Water Association (NGWA)
- Fellow of the Geological Society of London, and accredited Chartered Geologist since 2006
- Member of International Assoc. Hydrogeologists (IAH), former secretary and then chairperson of the South African Chapter of the IAH
- Member of the European Federation of Geologists

Publications

Jude has authored more than **30** peer-reviewed journal articles, published reports and book chapters, and he has delivered more than **24** conference and short-course presentations. Topics include water governance, water and development, hydrogeology, water pollution, science communication, transboundary water management and water balance assessments. He is particularly interested in the role of food security and irrigation in policy and development in rural Africa and Asia, from a transdisciplinary perspective.

Jude's Google Scholar h-index is 17, his i10 index is 29, and he currently has more than 1075 citations.

A list of Jude's publications and conference presentations is shown on the following pages.

Peer-reviewed journal articles, book chapters, reports, and conference papers

- Manzungu E, **Cobbing J**, Van Koppen B, Troell J, Mapedza E, Mwakiwa E, Nhiwatiwa T, Nyabako T, Nkomo L, Takawira D and Mayer J (2024) Financial sustainability of multiple use water systems: Experiences from Zimbabwe and implementation and policy implications for sub-Saharan Africa. Submitted to Water SA (*in press*)
- Cobbing JE** (2021) Integrated Water Resources Management: What Is It and What Does It Mean for Resilience Food Security Activities? Report by Save the Children and Mercy Corps as part of the PRO-WASH and SCALE Awards. Washington DC, United States.
- Cobbing JE** and Weber N (2021) A Guide to Online and Accessible Resources on Groundwater. Report by Save the Children and Mercy Corps as part of the PRO-WASH and SCALE Awards. Washington DC, United States.
- Cobbing JE**, Lambert K, Blumenstock A, Weber N, and Meyer J (2021) Climate Change, Risk, and Resilience in WASH and Agriculture Projects. Report by Save the Children and Mercy Corps as part of the PRO-WASH and SCALE Awards. Washington DC, United States.
- Cobbing JE** (2021) Analysis of the groundwater resource and governance in Bangladesh, Ghana, India, Nepal and Nigeria. Global Synthesis Report to WaterAid, London, United Kingdom.
- Cobbing JE** (2020) Groundwater and the discourse of shortage in Sub-Saharan Africa. Hydrogeology Journal. Vol. 28:4, pp 1143-1154.
- Cobbing JE** and Hiller B (2019) Waking a sleeping giant: Realizing the potential of groundwater in Sub-Saharan Africa. World Development 122 (2019) pp 597–613.
- Cobbing JE** (2019) Book review: Field Hydrogeology (Fourth Edition), 2017, by Rick Brassington. Wiley Blackwell, London. Quarterly Journal of Engineering Geology and Hydrogeology. Vol. 52, Issue 1.
- Wijnen M, Barghouti S, **Cobbing JE**, Hiller B, and Torquebiau R (2018) Assessment of groundwater challenges and opportunities in support of sustainable development in Sub-Saharan Africa. World Bank Group, Washington, D.C.
- Cobbing, JE** (2018) The North West dolomite aquifers, South Africa: a stalled opportunity for water security and development. Colombo, Sri Lanka: International Water Management Institute (IWMI). 22p. (Groundwater Solutions Initiative for Policy and Practice (GRIPP) Case Profile Series 03). doi: 10.5337/2018.223
- Cobbing JE** and Rose-Innes C (2018) Groundwater Governance: The Case of the Grootfontein Aquifer at Mahikeng, South Africa. Water Alternatives 11(3): pp 607-622
- Cobbing JE** (2018) Book review: Water Wells and Boreholes (Second Edition), 2017, by Bruce Misstear, David Banks and Lewis Clark. Wiley Blackwell, London. Quarterly Journal of Engineering Geology and Hydrogeology. Vol. 51, pp 402.
- Cobbing JE** and de Wit MJ (2018) The Grootfontein Aquifer: Governance of a Hydro-Social System at Nash equilibrium. South African Journal of Science Vol. 114 No. 5/6 pp 1-7.
- Cobbing JE** (2018) An updated water balance for the Grootfontein aquifer near Mahikeng. Water SA Vol. 44 No. 1.
- Cobbing JE** (2017) Book review: Pollution and the Atmosphere. Designs for Reduced Emissions. Edited by Marco Ragazzi, Apple Academic Press, New Jersey. Quarterly Journal of Engineering Geology and Hydrogeology, Vol. 50, pp 368.
- Cobbing JE**, Eales K and Rossouw T (2016) The Path to Successful Water User Associations in the North West Dolomite Aquifers. Final Report of Project K5-2429. Water Research Commission, Pretoria.
- Cobbing JE** (2016) Book review: Sustainable Mining in Ecologically Sensitive Landscapes. Edited by Mark Tibbett, CRC Press/Balkema, Leiden, 2015. Quarterly Journal of Engineering Geology and Hydrogeology, Vol. 49, pp 193.
- Cobbing JE**, Eales K, Gibson J, Lenkoe K and Cobbing BL (2015) Operation and Maintenance (O&M) and the perceived unreliability of domestic groundwater supplies in South Africa. South African Journal of Geology Vol. 118.1, pp 17-32.
- Adams S, Braune E, **Cobbing JE**, Fourie F and Riemann K (2015) Critical reflections on 20 years of groundwater research, development and implementation in South Africa. South African Journal of Geology Vol. 118. 1, pp 5-16.

- Adams S, **Cobbing JE** and Riemann K (2015) Introduction to Groundwater Special Edition. South African Journal of Geology Vol. 118. 1, pp 1-4.
- Cobbing JE**, Eales K, Lenkoe K, Gibson J and Rossouw T (2014) An appraisal of diverse factors influencing the long-term success of groundwater schemes for domestic water supplies, focusing on priority areas in South Africa. Final Report of Project K5-2158. Water Research Commission, Pretoria.
- Davies J, Robins NS, Farr J, Sorensen JPR, Beetlestone P and **Cobbing JE** (2013) Identifying transboundary aquifers suitable for international resource management in the SADC Region of southern Africa. Hydrogeology Journal, Vol. 21, pp 321-330.
- Cobbing JE**, Adams S, Dennis I and Riemann K (Eds.) (2013) Assessing and Managing Groundwater in Different Environments. IAH Selected Papers on Hydrogeology. Volume 19, CRC Press / Balkema, Leiden, The Netherlands. ISBN 978-1138001008.
- Allwright A, Witthueser K, **Cobbing JE**, Mallory S and Sawunyama T (2013) Development of a Groundwater Resource Assessment Methodology for South Africa: Towards a Holistic Approach. Final Report of Project K5-2048. Water Research Commission, Pretoria.
- Cobbing JE** and Rossouw T (2012) First Do No Harm. Article in Geodrilling International, October 2012. Aspermont Media Limited, London, UK.
- Cobbing JE** and Davies J (2011) Essay: Improving access to southern Africa's groundwater "grey data". Hydrogeology Journal Vol. 19, pp 1117-1120.
- Cobbing JE** (2011) The use of English in South African science. South African Journal of Science Vol. 107(1/2), Art. #390, 5 pp.
- Cobbing JE** and Davies J (2010) Groundwater: Returning to the Sources. Article in Planet Earth, magazine of the Natural Environment Research Council (NERC), United Kingdom.
- Cobbing JE**, Hobbs PJ, Meyer R and Davies J (2008) A critical overview of transboundary aquifers shared by South Africa. Hydrogeology Journal Vol. 16, pp 1207-1214.
- Cobbing JE** and Davies J (2008) The benefits of a scientific approach to sustainable development of groundwater in Sub-Saharan Africa. In: Adelana SMA and MacDonald AM Applied Groundwater Studies in Africa. IAH Selected Papers on Hydrogeology, Volume 13, CRC Press / Balkema, Leiden, The Netherlands.
- Cobbing JE** (2008) Hydrogeology in sub-Saharan Africa: training and employment opportunities. Report of a survey conducted on behalf of the Burdon Network of the International Association of Hydrogeologists (IAH). Water Geosciences Consulting, Pretoria.
- Cobbing JE** (2008) Institutional Linkages and Acid Mine Drainage: The Case of the Western Basin in South Africa. International Journal of Water Resources Development, Volume 24, Issue 3, September 2008.
- Robins NS, Chilton PJ and **Cobbing JE** (2007) Adapting existing experience with aquifer vulnerability and groundwater protection for Africa. Journal of African Earth Sciences Vol. 47 Issue 1 January 2007.
- Cobbing JE** and Ó Dochartaigh BÉ (2007) Hydrofracturing water boreholes in hard rock aquifers in Scotland. Quarterly Journal of Engineering Geology and Hydrogeology 2007 Vol. 40, pp 181-186.
- Burgess WG, Ahmed KM, Carruthers A, Cheetham H, **Cobbing JE**, Cuthbert M, Mather S and McCarthy E (2007) Trends in Arsenic concentration at tubewells in Bangladesh: conceptual models, numerical models and monitoring proxies. Chapter 2 in Trace Metals and other Contaminants in the Environment, Volume 9. Arsenic in Soil and Groundwater Environment: BioGeochemical Interactions, Health Effects and Remediation. Editors: Prosun Bhattacharya, Arun Mukherjee, Ron Zevenhoven, Jochen Bundschuh and Richard Loeppert, 59-80. Elsevier B.V. ISBN 0-444-51820-7; ISSN 0927-5215.
- Turton A, Patrick M, **Cobbing JE** and Julien F (2006) The Challenges of Groundwater in Southern Africa. In: Navigating Peace, August 2006, No. 2. Woodrow Wilson International Center for Scholars, Washington DC, USA.
- Murray R, **Cobbing JE**, Woodford A, Ravenscroft P and Chevallier L (2006) Groundwater Research Needs in the Eastern Karoo Basin of South Africa. Water Research Commission Report No. TT286/06. Water Research Commission, Pretoria. ISBN 1770054970.
- Cobbing JE** and Davies J (2004) Understanding problems of low recharge and low yield in boreholes: an example from Ghana. AA Balkema Publishers, pp 87-96. ISBN 9780415359139.

- Burgess WG, Ahmed KM, **Cobbing JE**, Cuthbert MO, Mather SE, McCarthy E & Chatterjee D (2002) Anticipating changes in arsenic concentration at tubewells in alluvial aquifers of the Bengal Basin. In: Bocanegra E., Martinez D. & Massone H. (eds) Groundwater and Human Development. Proceedings of the XXXII IAH and VI ALHSUD Congress, Mar del Plata, Argentina, October 2002, pp. 365-371. ISBN 987-544-063-9.
- Burgess WG, Ahmed KA, Burren M, Carruthers A, **Cobbing JE**, Cuthbert MO, Mather SE, McCarthy EM, Perrin J and Chatterjee D (2001) The distribution, hydrochemical context and mobility of arsenic in alluvial aquifers of the Bengal Basin. Geological Society of America Annual Meeting, Boston, Nov. 1-10, 2001, Abstracts Volume 33, No. 6, p. A 115.
- Sullivan C, Meigh J, Giacomello A, Fediw T, Lawrence P, Samad M, Mlote S, Hutton C, Allan J, Schulze R, Dlamini D, Cosgrove W, Priscoll J, Gleick P, Smout I, **Cobbing J**, Calow R, Hunt C, Hussain A, and Steyl I (2003) The Water Poverty Index: development and application at the community scale. Natural Resources Forum, Vol 24 Issue 3 pp 189-199. <https://doi.org/10.1111/1477-8947.00054>

Conference presentations and training courses presented

- Water Resources Podcast on Groundwater in Africa. Bureau of Economic Geology, The Jackson School of Geosciences at the University of Texas at Austin in partnership with the National Academy of Engineering. Available at <https://wrp.beg.utexas.edu/>. May 2024.
- Panellist at Policy and pathways for scaling smallholder irrigation event, 2023 Water for Food Global Conference, Lincoln, Nebraska, United States on May 9, 2023.
- Developed materials for and convened a one-week training course on water quality monitoring to USAID BHA specifications in Bulawayo, Zimbabwe, July to August 2022.
- Overview of water security in developing countries: Panellist on the AGILE 2021 Innovation Series Event: Protecting the World's Water Supply event. World Trade Center Institute, Baltimore, Maryland, United States.
- Time for a Groundwater Revolution: Security and Water Supply in Sub-Saharan Africa. Presentation to the National Groundwater Association Conference "Groundwater Solutions: Innovating to Address Emerging Issues for Groundwater Resources", Arlington, Virginia, United States on August 6, 2019.
- An Assessment of Groundwater Challenges and Opportunities in Support of Sustainable Development in Sub-Saharan Africa. Short presentation to the USAID Bureau for Food Security, Ronald Reagan Building, Washington DC, United States, on June 7, 2018.
- Re-inventing the Wheel – The Iterative Development of Groundwater Sustainability in Southern Africa. Presentation at the 14th biennial conference of the Ground Water Division of the Geological Society of South Africa, Muldersdrift, Gauteng, on September 23, 2015.
- Policy and pragmatism in South African groundwater management. Presentation at the 14th biennial conference of the Ground Water Division of the Geological Society of South Africa, Muldersdrift, Gauteng, on September 21, 2015.
- Management of the Groundwater Resources of the Grootfontein Aquifer, Mahikeng. Presentation at the Regional Meeting on Tools for the Sustainable Management of Transboundary Aquifers organised by UNESCO-IHP and IWMI, Johannesburg, Gauteng, on July 29, 2015.
- Factors influencing successful groundwater management in the North West Dolomites, South Africa. Presentation at the 2nd ChinAfrica Dialogue Forum on Water Resources, Guilin, China, on October 27, 2014.
- Groundwater Governance and Management. Short Course for the Ground Water Division of the Geological Society of South Africa, University of Pretoria, Gauteng, on September 16, 2014.
- Impacts on Urban Water Quality. Presentation at the Urban Hydrology: Water in the City of Tshwane conference, University of Pretoria, Gauteng, on January 23, 2014.
- Managing groundwater for municipal water supplies in South Africa: Some results of recent research. Presentation at the Water Institute of South Africa (WISA) workshop "Groundwater Challenges in South Africa: Quo Vadis?" in Mbombela, Mpumalanga, on May 26, 2014.

Future Bulk Water Supply for Development and the Role of Groundwater. Presentation at the Geohydrology for Geologists one-day conference organised by the Geological Society of South Africa and held at the Glen Hove Conference Centre, Johannesburg, Gauteng on March 14, 2014.

Groundwater for Rural Water Supplies in South Africa. Short course at the 13th biennial conference of the Ground Water Division of the Geological Society of South Africa, Durban, KwaZulu-Natal, on September 18, 2013.

Constraints to Municipality Groundwater Management. Presentation at the 13th biennial conference of the Ground Water Division of the Geological Society of South Africa, Durban, KwaZulu-Natal, on September 16, 2013.

Groundwater in South Africa: Specific Legal Challenges and Tools. Presentation to Jordanian delegation, USAID Institutional Support and Strengthening Program (ISSP), Johannesburg, Gauteng, on June 4, 2013.

Favourable Zone Identification for Groundwater Development: Options Analysis for Local Municipalities. Presentation to the Municipal District Managers Forum convened by the Department of Water and Sanitation, St George's Conference Centre, Midrand, Gauteng on March 26, 2013.

Groundwater Governance of Four Productive Aquifers in South Africa. Presentation to the International Conference on Fresh Water Governance and Sustainable Development organised by the Water Research Commission and the Department of Water and Sanitation at the Champagne Sports Resort, Drakensberg, KwaZulu-Natal, on November 6, 2012.

Favourable Zone Identification for Groundwater Development: Options Analysis for Local Municipalities. Presentation to the Symposium on Groundwater and Municipalities held at the University of Potchefstroom, Free State, on October 15, 2012.

Favourable Zone Identification for Groundwater Development: Options Analysis for Local Municipalities. Presentation at the 2012 Water Institute of South Africa (WISA) Biennial Conference & Exhibition, Cape Town, Western Cape, on May 9, 2012.

Co-presenter and co-organiser on 3-day post-conference technical groundwater and geology tour of Gauteng and Mpumalanga Provinces, following the 12th biennial conference of the Ground Water Division of the Geological Society of South Africa, Pretoria, Gauteng, on September 22-24, 2011.

"Grey Data": Groundwater Knowledge Sharing in SADC. Presentation to the Water Research Commission, Pretoria, Gauteng, on December 14, 2010.

Integrating Groundwater into National Water Resources Planning. Presentation at the 11th biennial conference of the Ground Water Division of the Geological Society of South Africa, Somerset West, Western Cape, on November 18, 2009.

Groundwater Management in South Africa: What role for Science? Presentation at the 11th biennial conference of the Ground Water Division of the Geological Society of South Africa, Somerset West, Western Cape, on November 16, 2009.

Groundwater in South Africa: Of 'Eyes' and other Peculiarities. Presentation to the UCL Geography MSc class, London, on July 19, 2009.

Drilling Methods and Borehole Construction. Short Course presented at the Council for Geoscience, Pretoria, Gauteng on May 19, 2009.

Problems of low recharge and low yield in boreholes: an example from Ghana. Presentation at the International Conference on Water Resources of Arid and Semi-Arid Regions of Africa (WRASRA) at the University of Botswana, Gaborone, on August 4, 2004.