

## CURRICULUM VITA

**Surname** Villholth  
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**Date of Birth** 04 May1960  
**Nationality** Danish  
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## Short Bio

Dr Karen G. Villholth is Director of **Water Cycle Innovation (Pty) Ltd** ([WCI](#)), a unique consultancy specialized in water for climate resilience, food security, and water cooperation, serving the needs of policy makers, donors, governments, UN organizations and international institutions, non-governmental institutions (NGOs), and the private sector. In this role, she has supported, *inter alia*, UNESCO, World Bank, Swiss Agency for Development and Cooperation (SDC)/Skat/RésEAU, and University of Copenhagen.

She holds more than 25 years of experience in research for development. She chaired for more than 5 years the **Groundwater Solutions Initiative for Policy and Practice** ([GRIPP](#)), a global partnership of 30 international organizations with mandates in development, use and sustainable management of groundwater. She has led and managed multiple international research projects in developing and developed countries and has experience managing large research teams and collaborating with diverse stakeholders. She also has expertise in capacity development, science-to-policy communication, and information management.

Her areas of expertise include groundwater resources assessment and integrated modelling, climate change and impacts on groundwater, transboundary waters, groundwater-dependent ecosystems, groundwater-based natural infrastructure ([GBNI](#)), groundwater quality and protection, conjunctive or 'Whole of the Water Cycle' management, and water governance. She embeds her technical and groundwater expertise into advisory services on policy making and implementation related to the UN Sustainable Development Goals, national water policies, climate change adaptation and mitigation, transboundary water cooperation, and food system transformation addressing climate, food, water, and environmental challenges.

Dr Villholth co-authored four chapters of the UN World Water Development Report of 2022, entitled 'Groundwater – Making the Invisible visible', i.e., the chapters on Groundwater and Agriculture, Groundwater and Ecosystems, Groundwater and Climate Change, and Transboundary Aquifers.

Her portfolio embraces significant interdisciplinary approaches, collaborations and advisory roles, including for UN-Water and UNESCO on the [UN 2023 Water Conference](#) and the 2022 [UN-Water Summit on Groundwater](#), the World Bank on the Flagship Report on Groundwater 'The Hidden Wealth of Nations - The Economics of Groundwater in Times of Climate Change', the African Minister's Council on Water ([AMCOW](#)); [UNESCO International Shared Aquifer Resources Management \(ISARM\)](#), [UN WWAP](#) and the World Water Development Reports; the Expert Group under [FAO](#) on Environmental Flows supporting SDG 6.4.2; the Expert Group under [UNECE](#) on Water Allocation in Transboundary Context; UNESCO and the [Sustainable Water Future Program](#) under Future Earth on the [UN 2023 Water Conference](#); UN-Water Task Force on Unconventional Water Resources under [UNU-INWEH](#); Friends of Groundwater under [UNEP's World Water Quality Program](#); the [SuSanA](#) Network on Sanitation; the [Groundwater Project](#); [WHO](#) on the 2012 Indian Ocean tsunami, [IAEA](#) on groundwater vulnerability, the [Global Groundwater Sustainability Statement and Call to Action](#); [African Groundwater-Network](#); [Rural Water Supply Network](#); [IWA](#); [IWRA](#); [IAH](#), [GSA](#), etc.

Dr Villholth holds a PhD and an MSc from Technical University of Denmark and an MSc from University of Washington, USA. She previously worked for the International Water Management Institute (IWMI), DHI-Water and Environment,

and Geological Survey of Denmark and Greenland. She is editor of eleven books and special issues and author of more than 100 peer-reviewed international journal articles and book chapters.

## Education

01.10.1989 - 24.03.1994	Ph.D. Civil Engineering. Specialized in flow and transport processes in soil and groundwater. Technical University of Denmark.
01.09.1988 - 01.09.1989	M.Sc. Civil Engineering. Specialized in soil physics, hydrology, hydrodynamics, groundwater flow, solute transport and computational hydraulics. University of Washington, Seattle, USA.
01.09.1982 - 31.01.1988	M.Sc. Chemical Engineering. Technical University of Denmark.

## Language Skills

	<u>Written</u>	<u>Spoken</u>
Danish	Mother tongue	Mother tongue
English	Fluent	Fluent
Spanish	Good	Fluent
German	Fair	Fair
French	Basic	Basic

## Professional Experience

2022 - date	Consultant, UNESCO.
2022 - date	Consultant, World Bank.
2022 - date	Director, Water Cycle Innovation (WCI).
2020 - 2022	Principal Researcher, Coordinator Groundwater, International Water Management Institute (IWMI), CGIAR Research Centre, Pretoria, South Africa.
2017 - 2019	Principal Researcher, Research Group Leader - Resilient and Sustainable Groundwater, International Water Management Institute ( <a href="#">IWMI</a> ), CGIAR Research Centre, Pretoria, South Africa.
2016 - 2022	Chair of <a href="#">GRIPP</a> , Groundwater Solutions Initiative for Policy and Practice.
2016 - 2017	Principal Researcher, sub-Theme Leader - Groundwater and Underground Solutions, International Water Management Institute (IWMI), CGIAR Research Centre, Pretoria, South Africa.
2012 - 2016	Senior Researcher, Groundwater Management, International Water Management Institute (IWMI), CGIAR Research Centre, Pretoria, South Africa.
Sep. 2007 - 2011	Senior Researcher, GEUS, Geological Survey of Denmark and Greenland, Copenhagen, Denmark.
2007 - 2008	Senior Associate, International Water Management Institute (IWMI), CGIAR Research Centre with headquarters in Colombo, Sri Lanka. Working from Denmark.
2004 - 2007	Senior Researcher, Groundwater Management, International Water Management Institute (IWMI), CGIAR Research Centre with headquarters in Colombo, Sri Lanka.
2001 - 2004	Water Resources and Soil and Groundwater Specialist, Water Management Department, Water Resources Division, DHI Water & Environment, Denmark.
2000 - 2001	Technical Advisor, Environmental Sector Programme Support, Danida, Bolivia.
1996	Danida-seconded Faculty, Asian Institute of Technology, Thailand.
1994 - 2000	Research Professional. Department of Groundwater, Solid Waste and Microbiology, VKI, Denmark.
1994 - 2000	Associate Lecturer and Research Associate, Institute of Hydrodynamics and Water Resources (ISVA), Technical University of Denmark.

1990 - 1994	Consultant. Hydrological field investigations and numerical modelling. Water Resources Department, Danish Hydraulic Institute
1993	Research Associate, University of Colorado, Boulder, CO, USA.
1989 - 1993	Ph.D. Student and Teaching Assistant. Flow and transport phenomena in clay till soils with macropore structure. Field, laboratory and numerical Investigations. Institute of Hydrodynamics and Hydraulic Engineering (ISVA), Technical University of Denmark.
1990	Consultant. Field investigation techniques and parameter estimation guidelines for hydrological modelling, India. Danish Hydraulic Institute.
1988	Research Assistant. Modelling of hydrological processes in forest ecosystems. Institute of Hydrodynamics and Hydraulic Engineering (ISVA), Technical University of Denmark.

### Assignments and Projects

2026 - 2030	Generating peri-Urban Aquifer Resiliency in the Dakar-Thiès-Mbour Triangle (GUARD). Project Investigator. <i>Client: Danida.</i>
2025 - date	Invited Guest Editor to Groundwater for Sustainable Development special issue on Managed Aquifer Recharge (MAR): From Theory to Implementation and Operation.
2024	Invited Keynote Speaker for the launch event of the Swiss Agency for Development and Cooperation (SDC)/Skat/RésEAU <a href="#">Learning Journey on Groundwater</a> . Oct 2024.
2023 - date	Invited Main Author to the World Bank report: "Expansion without Exhaustion - Tackling Groundwater Sustainability in Farmer-led Irrigation Development in Sub-Saharan Africa."
2022 - 2024	Invited Individual Specialist to UNESCO on various assignments related to the UN-Water Summit on Groundwater Dec 2022, the UN 2023 Water Conference, and strategic proposal development, including to SDC selective tender on transboundary aquifers in Central Asia, Middle East, East and West Africa: "Governance and Cooperation on Transboundary Aquifers (UNESCO GCTA)".
2022 - 2023	Invited International Collaborator on the World Bank report: <a href="#">The Hidden Wealth of Nations: The Economics of Groundwater in Times of Climate Change</a> .
2022	Invited Peer Reviewer for Ministry of Foreign Affairs of Denmark (MFA) on grant proposal 'Enhancing resilience of Coastal communities: "Towards sustainable FISHerries and a healthy marine environment (ECOFISH)" for development research activities under the Danish Fellowship Centre DFC.
2022 - 2025	Enhancing Sustainable Groundwater Use in South Africa, 2 <sup>nd</sup> phase (ESGUSA-2). Co-Project Leader. <i>Client: Danida.</i>
2021	Invited Member of External Advisory Panel of Department of Planning, Industry and Environment-Water Division (DPIE-Water), New South Wales, Australia for the development of the Groundwater Strategy for New South Wales.
2021 - 2023	Sustainable Groundwater Development and Management for Humans, Wildlife, and Economic Growth in the Kavango Zambezi Transfrontier Conservation Area (KAZA-GROW). Project Leader. <i>Client: Resilient Waters Program/USAID.</i>
2020 - 2022	E-flows for the Limpopo River - building more resilient communities and ecosystems through improved management of transboundary natural resources. Project Investigator. <i>Client: Resilient Waters Program/USAID.</i>
2019 - 2022	Groundwater for Resilience in Africa Network (GRAN). Project Leader. <i>Client: UKRI/GCRF.</i>
2018 - 2019	Conjunctive Management in SADC's Shared Waters: Generating Principles through Fit-for-Purpose Practice. Focus: Tuli Karoo Aquifer. Project Investigator. <i>Client: USAID.</i>
2018 - 2019	Conjunctive Water Resources Management in the Shire River Basin (Shire ConWat). Project Leader. <i>Client: World Bank/SADC-GMI.</i>
2018 - 2021	Enhancing Sustainable Groundwater Use in South Africa (ESGUSA). Project Investigator. <i>Client: Danida.</i>

- 2018 Contributor to the RAMSAR Resolution XIII.19 on 'Sustainable Agriculture in Wetlands', adopted during 13<sup>th</sup> Meeting of the Conference of the Contracting Parties to the Ramsar Convention on Wetlands, Dubai, United Arab Emirates, 21-29 October 2018. [https://www.ramsar.org/sites/default/files/documents/library/xiii.19\\_agriculture\\_e.pdf](https://www.ramsar.org/sites/default/files/documents/library/xiii.19_agriculture_e.pdf).
- 2017 - 2019 Managing Groundwater for Drought Resilience in South Asia. Project Investigator. *Client: World Bank*, under South Asia Water Initiative II.
- 2017 - 2019 Resilience in the Limpopo Basin: The Potential Role of the Transboundary Ramotswa Aquifer (RAMOTSWA-2). Project Leader. *Client: USAID Global Development Lab*.
- 2016 - 2022 Groundwater Solutions Initiative for Policy and Practice (GRIPP). Chair. *Client: Water, Land and Ecosystems Research Program under CGIAR*.
- 2015 Independent Reviewer on proposals for DFID/NERC call on Future Climate for Africa.
- 2015 - 2018 Groundwater Recharge in the Limpopo River Basin (GRECHLIM). Project Leader. *Client: USAID-PEER (Partnerships for Enhanced Engagement in Research) and National Research Foundation, South Africa*.
- 2015 - 2017 Resilience in the Limpopo Basin: The Potential Role of the Transboundary Ramotswa Aquifer (RAMOTSWA). Project Leader. Flagship project. *Client: RESILIM and USAID*.
- 2015 - 2019 Groundwater Futures (GroFutures). A project under the UPGro (Unlocking the Potential for Groundwater for the Poor - Sub-Saharan Africa) Program. Project Investigator. *Client: DFID, NERC and ESRC*.
- 2014 Co-organised a workshop under the CGIAR Water, Land and Ecosystems Program entitled: 'Managing Smallholder Groundwater-dependent Agrarian Socio-ecologies using an Ecosystem Service and Resilience Based Approach', Colombo, Sri Lanka. Nov. 04-07, 2014.
- 2013 - 2015 A Global Study on Linking Food Production with Groundwater Depletion and Potential. A component of the Policies, Institutions and Markets Program (PIM). Project Leader. *Client: CGIAR*.
- 2014 Assessment of Groundwater Availability from Instream Flow Requirements and Recession Flows of Rivers in South Africa. Project Leader. *Client: Water Research Commission of South Africa*.
- 2013 - 2014 GroFutures – Groundwater Futures. A project under the UPGro (Unlocking the Potential for Groundwater for the Poor - Sub-Saharan Africa) Program. Project Investigator. *Client: DFID, NERC and ESRC*.
- 2012 - 2021 Sustainable Groundwater. A component of the Water, Land and Ecosystems Research Programme (WLE). Project Leader. *Client: CGIAR*.
- 2011 - 2016 SuGWM - Community-based Sustainable Groundwater Management through Social Regulations and Local Governance, Andhra Pradesh, India. Resource Person. *Client: European Commission (EuropeAid)*.
- 2011 Independent Expert and Evaluator on the call FP7-ENV-2011, Theme 6 'Environment (including climate change)'. *Client: European Commission*.
- 2010 - 2011 Expert Reviewer on IPCC Special Report: 'Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation', published Nov. 2011. [https://www.ipcc.ch/site/assets/uploads/2018/03/SREX\\_Full\\_Report-1.pdf](https://www.ipcc.ch/site/assets/uploads/2018/03/SREX_Full_Report-1.pdf).
- 2010 - 2011 Southern African Development Community SADC Groundwater and Drought Management Project. Project Leader for component: Regional Groundwater Vulnerability Mapping. *Client: World Bank/GEF, Washington D.C., USA*.
- 2009 - 2014 CLIVET - Impacts of Climate Change on Water Resources and Agriculture - and Adaptation Strategies in Tanzania (2009-2014). Project Leader. *Client: Consultative Research Committee for Development Research (FFU), Ministry of Foreign Affairs of Denmark*.
- 2009 - 2010 'The long-term impacts of point source pollution sources on groundwater quality' (In Danish: Punktkilders langsigtede påvirkning af grundvandsressourcens kvalitet.). Project Leader. *Client: Miljøstyrelsen/Region Hovedstaden*.

- 2009 - 2011 'Demonstration of the Groundwater for Emergency Situations (GWES) methodology for identifying, characterizing, and managing strategic groundwater resources in Orissa state, east coast of India, impacted by recurrent storms and related coastal floods'. A pilot project under the GWES Project. Scientific Core team Committee Member. *Client: UNESCO IHP.*
- 2008 - 2010 Coordination Unit for Adaptation to Climate Change Research (KFT). Senior Research Advisor. Established under the Danish Government's strategy for adaptation to climate change in Denmark.
- 2008 - 2011 SPLASH, European Union Water Initiative European Research Area Network (EUWI Era-Net). Researcher. *Client: EC FP6.*
- 2008 - 2010 Adaptive and sustainable water management and protection of society and nature in an extreme climate (CLIWAT). Modelling of impacts of climatic change on saltwater intrusion in coastal areas in the North Sea Region and options for mitigation. Project Participant. *Client: The Interreg. IVB, North Sea Regional Programme.*
- 2008 - 2010 Prediction of Climatic Impacts on Pesticide Leaching to the Aquatic Environments (PRECIOUS). Modelling of impacts of climatic change on agricultural practices and pesticide leaching in Denmark and options for mitigation. Project participant. *Client: Danish Environmental Protection Agency.*
- 2007 IWRM – ABOVE AND BELOW GROUND. Extending GWP's support for IWRM approaches in River Basins and Water Catchments to effective management of groundwater aquifers. Consultant. *Client: Global Water Partnership (GWP).*
- 2006 - 2008 Tsunami Area Resources Management Initiative (TARMI). Groundwater assessment, rehabilitation and optimal use in the wake of the tsunami. Project Leader. *Client: Agriculture and Agri-Food Canada.*
- 2005 - 2007 Comprehensive Assessment of Water Management in Agriculture (2001-2007). Contributing to the assessment of the role of groundwater in agriculture. Lead Author on Ch.10 of final Synthesis Report.  
[https://www.iwmi.cgiar.org/assessment/files\\_new/synthesis/Summary\\_SynthesisBook.pdf](https://www.iwmi.cgiar.org/assessment/files_new/synthesis/Summary_SynthesisBook.pdf).  
*Client: Governments of the Netherlands, Switzerland, Sweden, Taiwan, Japan, Austria, as well as the CGIAR, FAO, OPEC, CGIAR Challenge Program on Water and Food, the CGIAR Gender and Diversity Program, the EU through the ISIM Project, and the Rockefeller Foundation and in-kind contribution from assessment participants.*
- 2005 - 2007 Groundwater Governance in Asia – Capacity Building through Action Research in the Indo-Gangetic Basin (IGB) and the Yellow River Basin (YRB) (2005-2008). Project Leader. Training and research program development for groundwater managers and journalists in five Asian countries. <http://www.waterandfood.org/gga/index.htm>. *Client: CGIAR Challenge Program on Water and Food.*
- 2005 - 2006 Bridging Relief Work with More Long-term Assessment and Remediation of Tsunami Effects on Groundwater and Water Supply in Sri Lanka (2005-2006). Project Leader. Groundwater monitoring and relief support to groundwater rehabilitation. *Client: CARE.*
- 2003 Danish Water Environment Plan III, Denmark. Project Participant and Modeller. Various measures to reduce nutrient load to Odense Fiord were evaluated through the development of an integrated surface water and groundwater model. The model is based on the MIKE SHE and MIKE 11 modelling codes. *Client: DMU for Danish Forest and Nature Agency.*
- 2003 Piedmonte Water Resources Action Plan, Italy (2002-2004). Project Participant and Modeller. A water action plan with emphasis on agricultural and industrial load to the groundwater and surface water system was developed for the Piedmonte Region, Italy. The region covers an area of more than 25.000 km<sup>2</sup> and several water resources numerical tools have been applied as support for the planning. *Client: Intecno-DHI for Region Piedmonte.*
- 2002 - 2003 Development and Validation of Model for Risk Assessment of Pesticides in Surface Water, Denmark (PestSurf) (1998-2002). Project Participant and Modeller. Development of a numerical model tool for evaluation of the risk of pesticide exposure in surface waters. The tool was produced for the Danish EPA and is used for pesticide registration purposes. *Client: Danish Environmental Protection Agency.*

2001	Strategic Review Mission of the component 'Water and Watershed Resources Management in the Estelí River Basin' (Follow-up on the Water Action Plan)" under the Environmental Sector Programme Support, Nicaragua (2001-2002). Hydrologist and Watershed Expert. <i>Client: Nordeco for Danida.</i>
2000 - 2001	Environmental Sector Programme Support, Bolivia. Technical Advisor to the component "Environmental Management in the Potosí Department", which included capacity development in the local environmental authorities, awareness raising, watershed management, and implementation of environmental, technical solutions, <i>Client: Danida.</i>
1999	Human Resources Development in Relation to Water, Burkina Faso. Water Resource Management Specialist. Danish Delegation to Burkina Faso Concerning Human Resources Development in Relation to Water. <i>Client: Danida.</i>
1999	Investigation of the Chemical Speciation of Arsenic in Contaminated Groundwater, Denmark. Project Participant. Field investigation and chemical speciation modelling of arsenic groundwater contamination. <i>Client: Information Centre on Contaminated Sites.</i>
1999	Consultancy Mission for Danida project: "Water Resources Management Sector Study", Bangladesh. Hydrogeologist and Water Quality Specialist. <i>Client: Danida.</i>
1995 - 1998	Transport of Pesticides from Agricultural Areas to the Water Environment via Colloid-facilitated Leaching through Macropores, Denmark. Project Manager. Field, laboratory and numerical modelling investigation of the effect of colloids on pesticide transport in soils. <i>Client: Danish Environmental Protection Agency.</i>
1995 - 1997	Transport of PAH-Compounds via Mobile Colloids in Soil and Groundwater, Denmark. Project Manager. Field and laboratory investigation of the effect of colloids on PAH mobility in groundwater. <i>Client: Danish Environmental Protection Agency.</i>
1998	Consultancy Mission for Danida project, Guatemala. Trainee. Consultancy mission for Danida project: "Proposal for a Regional Conference on Integrated Water Management in Central America". Initial support and technical assistance in the process of improving, consulting and validating a regional water status action plan for Central America. <i>Client: Danida.</i>
1997	Review Mission of Danida project, Uganda. Trainee. Review Mission of Danida project: "Strengthening of Water Resources Monitoring and Assessment Services". Analysis and assessment of the progress and status of an on-going project, including recommendations for adjustment in project organization, budget and timing. <i>Client: Danida.</i>
1996	Teaching at Asian Institute of Technology (AIT), Thailand. Danida-seconded faculty. Teaching the Master of Science level course "Water Quality Management". School of Environment, Resources, and Development.

#### Professional Affiliations and Invited Roles

2025 - date	Invited Member of the International Advisory Board of the Office of the Manav Rachna Educational Institutions (MREI), Office of International Affairs & Collaborations (OIAC), Faridabad, India.
2025 - date	Invited Advisory Board Member for the Danida/DFC-project "Enhancing resilience of Tanzanian coastal communities: Towards sustainable fisheries and a healthy marine environment (ECOFISH)".
2025 - date	Invited Member of Expert Group for Conjunctive Water Management by United Economic Commission for Europe (UNECE).
2024 - date	Member of the Core Team of the International Association of Hydrogeologists (IAH) network: Liaison with United Nations Activities Network (LUNA), established at the 51 <sup>st</sup> International IAH Conference in Davos, Switzerland, Sep 08-13, 2024.
2024	Invited Peer Reviewer for European Research Council (ERC) Advanced Grants 2024, Feb 2024.



- 2023 - 2024 Member of the Prize Committee of the Zuckerberg Water Prize awarded for the second time during the International Water Summit. Midreshet Ben-Gurion, Sde Boqer Campus, Ben-Gurion University (BGU), Israel, May 27-28, 2024.
- 2023 - 2024 Member of the International Scientific Program Council of the 3<sup>rd</sup> International Conference: 'Toward Sustainable Groundwater in Agriculture - Linking Science and Policy', Burbank/San Francisco, Calif., USA, Jun. 17-20, 2024, organized by UC Davis and Water Education Foundation.
- 2023 Played a key role in supporting UNESCO's high-level side event on 'Groundwater: An Invisible Cross-Sectoral Fundament for Implementation of the Water Action Agenda', UN 2023 Water Conference 'Uniting the World for Water', New York, New York, Mar 22-24, 2023.
- 2023 Invited Moderator of virtual side event 'Enabling Water Security through Science, Research, Innovation and Policy - From Test Beds to Practice' by Univ. of Johannesburg, Dept. of Water and Sanitation, and Rand Water, South Africa. UN 2023 Water Conference 'Uniting the World for Water', New York, New York, Mar 22-24, 2023.
- 2023 Invited Panel Speaker to Transboundary Groundwater Resilience Network Panel Series: Demystifying Data and Developing Future Leaders, Feb 01, 2023.  
<https://tgr.nmwri.nmsu.edu/event/tgr-panel-series-demystifying-data-and-developing-future-leaders/>.
- 2022 Played a key role in supporting the [UN-Water Summit on Groundwater](#), Paris, France, Dec 06-08 Dec, 2022: 1. Moderated one of the ten high-level plenary sessions, on 'Governance', 2. Drafted and finalized the UN-Water [Joint Message and Call for Action on Groundwater](#) in consultation with UN-Water Member and Partner organizations as a contribution to the UN 2023 Water Conference and beyond; 3. Acted as General Rapporteur, providing [main messages](#) of the Summit sessions and side events in the Closing Ceremony; 4. Drafted the [Highlights and Call for Commitments from the Groundwater Summit](#); and 5. Supported UNESCO and UNECE in the development of the background paper for the Interactive Dialogue on Cooperation for Water.
- 2022 Invited as Member of the high-level task force on 'Science towards supporting SDG 6 and other related SDGs' for the UN 2023 Water Conference, by UNESCO-IHP and the Sustainable Water Future Programme.
- 2022 Invited to give plenary opening comments and setting the scene for the virtual CGIAR [NEXUS Gains' Groundwater Governance](#) Workshop, Nov 10, 2022.
- 2022 Invited as Panelist to the Pivotal Event at the World Water Day for the official launch of the 2022 World Water Development Report 'Groundwater – Making the Invisible Visible', Dakar, Senegal, Mar 22, 2022.
- 2022 Member of the Prize Committee of the Zuckerberg Water Prize, established and awarded at the first International Water Summit, Sde Boqer Campus, BGU, Israel, May 22- 3, 2022.
- 2021 Contributed to keynote presentation by AMCOW at the 4<sup>th</sup> SADC Groundwater Conference (virtual) 'Towards a Water Secure SADC - Groundwater Systems Thinking', Nov 10-12, 2021.
- 2021 Co-organized the AMCOW-led 8th African Water (AWW8) (virtual) 'Water Security for Development and Human Health', Nov 22-26, 2021.
- 2021 Invited as Member of the Stakeholder Panel to participate in the Final Review of the GeoERA Programme under the European Union's Horizon 2020 research and innovation programme.
- 2021 Invited by SIWI as co-Convenor for the Special Seminar on Groundwater for the World Water Week in 2022, the year of Groundwater – Making the Invisible Visible (later handed over to IWMI).
- 2021 Invited as Expert/Thought Leader to the Technical Advisory Group Meeting for the 8th Replenishment Cycle of the Global Environment Facility (GEF) Trust Fund in the expert cluster on 'Environmental and Transboundary Freshwater Security'.
- 2020 - 2021 Invited as Author and Contributor to the World Water Development Report 2022 on Groundwater – Making the Invisible Visible.
- 2020 - 2021 Member of the Technical Reference Group for the OKACOM Groundwater Assessment Project in OKACOM (The Permanent Okavango River Basin Water Commission).

2020 - date	Member of the Advisory Committee of the Groundwater Project, <a href="https://gw-project.org/">https://gw-project.org/</a> .
2020 - 2021	Member of the Technical Programme Committee of the ISARM (Internationally Shared Aquifer Resources Management) Conference, Dec. 06-08, 2021. <a href="https://en.unesco.org/conference/isarm2021">https://en.unesco.org/conference/isarm2021</a> .
2020 - 2022	Member of GeoERA Stakeholder Council, <a href="https://geoera.eu/organisation/">https://geoera.eu/organisation/</a> .
2020 - date	Associate Editor of the Editorial Board of Water and Human Health, a specialty section within Frontiers in Water.
2020 - date	Founding Member of the IWRA (International Water Resources Association) Groundwater Taskforce Bureau.
2019	Member of the leadership team for the <a href="#">Global Groundwater Sustainability Statement and Call to Action</a> .
2018 - date	Member of Technical Committee for the SADC-Groundwater Management Institute's ( <a href="#">SADC-GMI</a> ) Annual Groundwater Conferences.
2018 - 2019	Member of Program Committee of the Chapman Conference on Quest for Sustainability of Heavily Stressed Aquifers at Regional to Global Scales, Valencia, Spain, Oct 21-24, 2018.
2018 - 2019	Member of Program Committee of Future Earth Conference 'Towards a Sustainable Water Future', Bengaluru, India, Sep 24-27, 2019.
2019 - date	Working Group Lead for the Sustainable Sanitation Alliance (SuSanA) Working Group on Groundwater Protection, <a href="https://www.susana.org/en/working-groups/groundwater-protection">https://www.susana.org/en/working-groups/groundwater-protection</a> .
2018 - 2019	Member of UN-Water Taskforce on Unconventional Water Resources led by UNU-INWEH.
2017 - 2022	Associate Editor of Hydrogeology Journal (HJ).
2017 - date	Review Editor in Freshwater Science, part of the journal Frontiers in Environmental Science.
2016 - date	Co-Chair of the <a href="#">Groundwater Management Working Group</a> in the Sustainable Water Future Program under Future Earth.
2016 - 2022	Editor-in-Chief of Groundwater Solutions Initiative for Policy and Practice ( <a href="#">GRIPP</a> ) Case Profile Series.
2016 - date	Member of IWRA, International Water Resources Association, <a href="http://www.iwra.org/">http://www.iwra.org/</a> .
2015 - 2016	Member of the Program Council for the international conference: 'Towards Sustainable Groundwater in Agriculture – An International Conference Linking Science and Policy, 2016', Jun. 28-30, 2016, San Francisco, CA, USA.
2015 - 2016	Theme Champion for theme: Groundwater and Hydrogeology for the 35 <sup>th</sup> IGC, Aug. 27-Sep. 4, 2016, Cape Town, South Africa, <a href="http://www.35igc.org/">http://www.35igc.org/</a> .
2015	Member of the Scientific Advisory Board of the Water Resources Dialogue: ChinAfrica Series No. 3, Cape Town, South Africa, Aug. 17-19, 2015.
2014 - 2020	Founding Member and co-Chair of the IAH Commission on Transboundary Aquifers.
2014	Member of the Scientific Advisory Board of the Water Resources Dialogue: ChinAfrica Series No. 2, Guilin, China, Oct. 26-28, 2014.
2013 - date	Steering Committee Member of the African Groundwater Network (AGW-Net, <a href="http://agw-net.org/">http://agw-net.org/</a> ).
2013	External Examiner, Rhodes University, Grahamstown, South Africa.
2013 - date	Reviewer on various research proposals and member of reference groups for several projects for the Water Research Commission, South Africa.
2013	Member of the Scientific Advisory Board of the Water Resources Dialogue: ChinAfrica Series No. 1, Cape Town, South Africa, Jun. 26-28, 2013.
2009 - 2013	Member of the African Groundwater Network (AGW-Net, <a href="http://agw-net.org/">http://agw-net.org/</a> ).
2011 - 2015	Member of the Permanent Consultative Mechanism for the Groundwater Governance Project.



2011 - 2017	Founding member and co-Director of IAH Commission on Groundwater for Decision Makers.
2011 - 2012	Member of the Scientific Committee for the international conference: "Hydrogeology of Arid Environments", Mar. 14-17, 2012, Hannover, Germany.
2011 - date	Member of the working group Sustainable Groundwater Development of the Rural Water Supply Network (RWSN), <a href="http://www.rwsn.ch/">http://www.rwsn.ch/</a> .
2011 - 2012	Member of the International Scientific Advisory Committee for the 39 <sup>th</sup> IAH Congress: 'Confronting Global Change', Sep. 16-23, 2012, Niagara Falls, Ontario, Canada.
2010 - 2014	External Examiner, Faculty of Life Sciences, University of Copenhagen.
2009 - 2011	Core member of the Climate Change Task Force for research in development under the three Danish research networks: Danish Development Research Network (DDRN), Danish Water Forum (DWF), and Danish Research Network for International Health (ENRECA Health).
2009 - 2014	Founder and Chair of the Danish Chapter of IAH (International Association of Hydrogeologists). <a href="http://www.iah.org/">http://www.iah.org/</a> .
2009 - 2010	Member of the Program Council for the international conference: 'Towards Sustainable Groundwater in Agriculture – An International Conference Linking Science and Policy', Jun. 15-17, 2010, San Francisco, CA, USA.
2008	Member of the International Scientific Committee of the international conference: 'Water Unifies - Water Scarcity, Global Changes, and Groundwater Management Responses, Univ. of Calif., Irvine, CA, USA, Dec. 1-5, 2008.
2008 - 2010	Member of the Working Group of the GWES (Groundwater for Emergency Situations) project of the sixth phase of the UNESCO IHP Programme (2002-2007) under the title 'Identification and management of strategic groundwater bodies to be used for emergency situations as a result of extreme events or in case of conflicts'.
2008 - 2010	Senior Research Advisor, Coordination Unit for Research in Climate Change Adaptation (Koordineringsenhed for Forskning i Klimatilpasning (KFT)), Established under the government's strategy for adaptation to climate change in Denmark.
2007 - 2009	Member of the Botin Foundation Water Observatory, an interdisciplinary think tank to address global water issues. The Director is Professor Ramón Llamas, Emeritus Professor at the Complutense University, in Madrid, Spain.
2007 - 2009	Member of the Climate Change Task Force for research in development under the three Danish research networks: Danish Development Research Network (DDRN), Danish Water Forum (DWF), and Danish Research Network for International Health (ENRECA Health).
2008 - date	Member of IAH Burdon Groundwater Network, <a href="https://burdon.iah.org/">https://burdon.iah.org/</a> .
2007 - date	Member of IAH (International Association of Hydrogeologists), <a href="http://www.iah.org/">http://www.iah.org/</a> .
2007 - 2012	Member of IAHS (International Association of Hydrological Sciences), <a href="https://iahs.info/">https://iahs.info/</a> .
2006 - date	Member of ISGSD (International Society of Groundwater for Sustainable Development), <a href="https://www.isgsd.org/">https://www.isgsd.org/</a> .
1988 - date	Member of IDA, the Society of Danish Engineers.
1988 - date	Reviewer on several international, scientific peer-reviewed journals, including Nature, Climatic Change, Water Resources Research, Water Resources Management, Natural Hazards, Water, Hydrogeology Journal, Journal of Hydrology, Frontiers in Environmental Science, Frontiers in Water, and many others.

### Awards and acknowledgements

2026	Received Water Resources Research Editors' Choice Award for the paper: 'Groundwaterscapes: A Global Classification and Mapping of Groundwater's Large-Scale Socioeconomic, Ecological, and Earth System Functions.
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- 2022 Received a Certificate of Appreciation for '[exceptional services to advance the Objectives of the Commission for Managing Aquifer Recharge](#)' of the IAH-International Association of Hydrogeologists.
- 2022 Acknowledged by Stockholm International Water Institute (SIWI) as [Groundwater Champion](#) during a social media campaign associated with the Year of Groundwater 2022,
- 2021 The work I was leading at IWMI on the transboundary Ramotswa Aquifer from 2015-2019 was nominated and featured as a success story: Striving for a Groundwater-secure Future in the Limpopo. Success story. Summary output of the RAMOTSWA Projects. <https://www.iwmi.cgiar.org/success-stories/striving-for-a-groundwater-secure-future-in-the-limpopo/>.
- 2021 Invited as Renown Groundwater Specialist to give presentation and interview in the Water Underground Talks, <https://www.waterundergroundtalks.org/season-1.html>.
- 2014 Best Paper of the Year Award of the International Water Resources Association (IWRA) for the paper 'Groundwater Irrigation for Smallholders in Sub-Saharan Africa – A Synthesis of Current Knowledge to Guide Sustainable Outcomes' <https://www.iwra.org/best-paper-articles/>.
- 2010 Outcomes from post-tsunami support to recovery of drinking water supply in Sri Lanka was published in the IWMI-series Success Stories, Issue 7, 2010. [https://www.iwmi.cgiar.org/Publications/Books/PDF/the\\_story\\_behind\\_the\\_success.pdf](https://www.iwmi.cgiar.org/Publications/Books/PDF/the_story_behind_the_success.pdf)
- 2008 Best article and lecture in session nomination for the presentation 'A Conceptual Framework for How to Ensure Sustainable Use, Management, and Protection of Groundwater Resources for Water Supply during Disasters'. Paper invited for the XXXVI IAH Congress, Toyama, Japan, Oct. 26 to Nov. 1, 2008.
- 1988 Scholarship from the Valle Scholarship and Scandinavian Exchange Program for 1 one-year M.Sc. degree in civil and environmental engineering at the University of Washington, Seattle, Washington, USA.

### Teaching and Training

- 2012 - 2022 Supervisor for several interns working on groundwater-related subjects with IWMI. Coordinated and implemented several training workshops under the RAMOTSWA and GRECHLIM Projects.
- 2013 Contributed to the planning and implementation of a series of **training programs for African basin organisations on groundwater management**, including a training manual: Integration of Groundwater Management into Transboundary Basin Organizations in Africa. First course for ORASECOM, Johannesburg, Sep. 23-27, 2013. Funded by Cap-Net, BGR, and IMAWESA, in partnership with AGW-Net.
- 2010 Contributed to the implementation and teaching of the course **Groundwater Management in an IWRM Framework** as part of the Splash Project 'Support of the African Groundwater Network (AGW-Net) in capacity development, **Partenariat National de l'Eau –Togo (PNE-Togo)**, Lomé, Togo, Africa, April 13 -16, 2010.
- 2009 Contributed to the planning and teaching of the course **Groundwater Management for Water Managers: A role of hydrogeological science** as part of the Splash Project 'Support of the African Groundwater Network (AGW-Net) in capacity development, University of Witwatersrand, Johannesburg, South Africa, July 6-10, 2009.
- 2004 - 2008 Supervised two Ph.D. projects in collaboration with the University of Copenhagen and IWMI: **Impact of Tsunami on Groundwater in Sri Lanka** and **Integrating Remote Sensing and Hydrological Modeling for Groundwater Resources Assessment and Sustainable Use in the North China Plains**.
- 2004 - 2007 Supervisor for several interns working on groundwater-related subjects with IWMI.
- 2009 Organized and taught the FIVA Ph.D. course **Groundwater Management in a Global Context** at the University of Copenhagen, May 11-15, 2009.

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| 2009        | Teaching three sessions on groundwater in disaster management at the M.Sc. Program Master in Disaster Management at the University of Copenhagen, Apr. 27, 2009.  |
| 2008        | Teaching (in Spanish) the course 'El Agua Subterránea y su Gestión Técnica – Social' ( <b>Groundwater and its Technical and Social Management</b> ). ExpoAgua, Guanajuato, Mexico. Sep. 24-26, 2008.  |
| 2005 - 2008 | Project leader for a large research and capacity building project on groundwater governance in five East and South East Asian countries. Two annual international research and training programs, each consisting of a 5-week intensive classroom course and 16-week field action research program for groundwater researchers and managers.  |
| 2001 - 2003 | Performed capacity building activities for M.Sc. students at the Technical University of Denmark and visiting professionals at DHI within water resources management and the use and application of modelling decision support tools.   |
| 2000 - 2001 | Developed, planned and implemented capacity building efforts within the Environmental Sector Programme Support in Potosí, Bolivia.  |
| 1999        | Human Resources Development in Relation to Water, Burkina Faso. As a Water Resource Management Specialist, participated in a mission to assess teaching and research gaps in the water sector in Burkina Faso and to define collaboration possibilities with the Danish resource base.  |
| 1997 - 1998 | Contributed to an in-house training course for professionals on "Integrated Environment and Water Management", VKI, Denmark.  |
| 1996        | Conceived, developed and conducted a M.Sc. level course on "Water Quality Management" for engineering students at Asian Institute of Technology, Bangkok, Thailand.   |
| 1994 - 2000 | While associated with the Institute of Hydrodynamics & Water Resources, Technical University of Denmark as a Research Associate: <ul style="list-style-type: none"> <li>– Reviewed new textbook on hydrodynamics</li> <li>– Conducted various M.Sc. courses (Hydrology, Irrigation &amp; Water Resources, Groundwater Hydrology)</li> <li>– Advised Master and Ph.D. students on soil and groundwater hydraulics and contaminant transport and numerical modelling</li> <li>– Conceived, developed, and conducted a new M.Sc. course in "Integrated Water Resources Management"</li> <li>– Developed a Ph.D. course in "Colloid-Facilitated Transport in Soil and Groundwater"</li> </ul> |

## Media

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| 2009 - date | Participated in several public media coverages (national television, radio, newspapers), and were invited to feature in online/magazine op-eds related to groundwater, water management, and water security in development (National Geographic, The Atlantic, The Conversation, SciDev, The Guardian, Devex, Thomson Reuters, Zilient, Desert Sun, The Mail & Guardian, ReliefWeb, Preventionweb, truthout, Advanced Science News, WaterWorld, Phys.org, IISD, Smart Water Magazine, Green Climate Fund, New Business Ethiopia, etc.). Contributed to several project websites, blogs and podcasts. Responsible for the Water Cycle Innovation ( <a href="http://www.watercycleinnovation.com">www.watercycleinnovation.com</a> ) and GRIPP ( <a href="http://gripp.iwmi.org/">http://gripp.iwmi.org/</a> ) websites. |
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## Publications

### Peer-reviewed Books and Special Journal Issues

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| B12 | 2025 | <b>Villholth, K.G.</b> et al.: Expansion without Exhaustion: Tackling Groundwater Sustainability in Farmer-led Irrigation Development in Sub-Saharan Africa. World Bank, Washington, DC. |
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- B11 2024 Saha, D., **K.G. Villholth**, and M. Shamrukh (Eds.): *Managed Groundwater Recharge and Rainwater Harvesting - Outlook from Developing Countries*. Springer Nature, Singapore. 426 pp. ISBN978-981-99-8756-6. <https://doi.org/10.1007/978-981-99-8757-3>.
- B10 2023 Pavelic, P., **K.G. Villholth**, and S. Verma (Eds.): *Sustainable Groundwater Development for Improved Livelihoods in Sub-Saharan Africa*. Routledge, Oxfordshire, UK and New York, New York. 236 pp. DOI: 10.4324/9781003348788. ISBN 9781032391915. <https://www.routledge.com/Sustainable-Groundwater-Development-for-Improved-Livelihoods-in-Sub-Saharan/Pavelic-Villholth-Verma/p/book/9781032391915>.
- B9 2022 Loon, A. van, G.D. Baldassarre, U. Lall, **K.G. Villholth**, H. Kreibich, and T. Fuqiang (Eds.): *Hydrological Extremes and Society*. Research Topic, Frontiers in Water - Water & Human Systems. <https://www.frontiersin.org/research-topics/14499/hydrological-extremes-and-society#overview>.
- B8 2021 Zheng, Y., A. Ross, **K.G. Villholth**, and P. Dillon (Eds.): *Managing Aquifer Recharge: A Showcase for Resilience and Sustainability*. UNESCO/IAH/GRIPP, 379 pp. ISBN: 978-92-3-100488-9. <https://unesdoc.unesco.org/ark:/48223/pf0000379962>.
- B7 2019 Taylor, R.T., G. Favreau, B.R. Scanlon, and **K.G. Villholth** (Eds.): *Topical Collection: Determining groundwater sustainability from long-term piezometry in Sub-Saharan Africa*. Hydrogeol. J., 27, 443-446. <https://doi.org/10.1007/s10040-019-01946-9>.
- B6 2018 **Villholth, K.G.**, J. van der Gun, E. López-Gunn, K. Conti, and A. Garrido (Eds.): *Advances in Groundwater Governance*. Taylor & Francis Group, London, UK. 594 pp. ISBN: 1-138-02980-4. <https://gripp.iwmi.org/wp-content/uploads/sites/2/2019/01/advances-in-groundwater-governance.pdf>.
- B5 2013 Pavelic, P., **K.G. Villholth**, and S. Verma (Eds.): *Sustainable Groundwater Development for Improved Livelihoods in Sub-Saharan Africa*, Special Issue, Wat. Int., Part 1, 38(4), 363-503 ([http://www.tandfonline.com/toc/rwin20/38/4#\\_UvNzys5qOft](http://www.tandfonline.com/toc/rwin20/38/4#_UvNzys5qOft)); Part 2, 38(6), 790-863 ([http://www.tandfonline.com/toc/rwin20/38/6#\\_UvNz585qOft](http://www.tandfonline.com/toc/rwin20/38/6#_UvNz585qOft)).
- B4 2009 Mukherji, A., **K.G. Villholth**, B.R. Sharma and J. Wang (Eds.): *Groundwater Governance in the Indo-Gangetic and Yellow River Basins: Realities and Challenges*. IAH – Selected Papers on Hydrogeology, Volume 15. CRC Press, Taylor & Francis Group. 325 pp. ISBN: 978-0-415-46580-9.
- B3 2007 Giordano, M. and **K.G. Villholth** (Eds.): *The Agricultural Groundwater Revolution: Opportunities and Threats to Development*. CABI, in ass. w. IWMI. 419 pp. ISBN-13: 978 1 84593 172 8.
- B2 2006 Sharma, B.R., **K.G. Villholth**, and K.D. Sharma (Eds.): *Groundwater Research and Management: Integrating Science into Management Decisions*. Proceedings of IWMI-ITP-NIH International Workshop on: "Creating Synergy between Groundwater Research and Management in South and Southeast Asia", Feb. 8-9, 2005, Roorkee, India. Groundwater Governance in Asia Series. International Water Management Institute, South Asia Regional Office, New Delhi, India, 270 pp. ISBN: 92-9090-647-2.
- B1 1994 **Villholth, K.G.**: *Field and Numerical Investigation of Macropore Flow and Transport Processes*. Series Paper No. 57. Institute of Hydrodynamics and Hydraulic Engineering, Technical University of Denmark, 230 pp.

#### Peer-reviewed Journal Papers and Book Chapters

- P115 2026 Aureli, A. and **K.G. Villholth**: Addressing unseen but essential water resources. Cp. 36. In: Islam, S., K.M. Smith, M. Klimes, and A. Salzberg (Eds.): *Routledge Handbook of Water Diplomacy*. Routledge (Taylor & Francis Group). <https://doi.org/10.4324/9781003178439-37>.
- P114 2025 Huggins, X., T. Gleeson, J.S. Famiglietti, M.-L. Moore, and **Karen G. Villholth**: The puzzling yet tractable diversity of global groundwater sustainability challenges, *Nature Water* (preprint). <https://eartharxiv.org/repository/view/11030/>.

- P113 2025 Pavelic, P., S. Verma, and **K.G. Villholth**: Sustainable groundwater development for improved agrarian livelihoods in Sub-Saharan Africa: A decadal update. *Water International*. 10.1080/02508060.2025.2572254.
- P112 2024 UNECE: Good Practices and Lessons Learned in Data-sharing in Transboundary Basins. 118 pp. Contributed as Member of the Expert Group. ISBN: 978-92-1-003146-2.
- P111 2024 **Villholth, K.G.**: Role of water in food security and hunger reduction (SDG 2). In: Mukherjee, A. (Ed.): *Water Matters: Achieving the Sustainable Development Goals*. Elsevier. ISBN: 9780443155376.
- P110 2024 Pascual, R., L. Piana, S.U. Bhat, P.F. Castro, J. Corbera, D. Cummings, C. Delgado, E. Eades, R.J. Fensham, M. Fernández-Martínez, V. Ferreira, M. Filippini, G. García, A. Gargini, S.D. Hopper, L. Knapp, I.D. Lewis, J. Peñuelas, C. Preece, V.H. Resh, E. Romero, B. Samraoui, F. Samraoui, S. Segadelli, N.Th. Skoulikidis, C.N. Solak, J. Solé, **K.G. Villholth**, H.K. Wani, M. Cantonati, and L.E. Stevens: The cultural ecohydrogeology of Mediterranean-climate springs: A global review with case studies. *Environments*, 11:6, 110, <https://doi.org/10.3390/environments11060110>.
- P109 2024 Saha, D., **K.G. Villholth**, and M. Shamrukh: Managed groundwater recharge and rainwater harvesting for sustainable development: Research, practices, and policies from developing countries. In: Saha, D. **K.G. Villholth**, M. Shamrukh (Eds.): *Managed Groundwater Recharge and Rainwater Harvesting - Outlook from Developing Countries*. Springer Nature, Singapore. ISBN978-981-99-8756-6. <https://doi.org/10.1007/978-981-99-8757-3>.
- P108 2023 **Villholth, K.G.**: Groundwater irrigation for smallholders in Sub-Saharan Africa - a synthesis of current knowledge to guide sustainable outcomes. In: Pavelic, P., **K.G. Villholth**, and S. Verma (Eds.): *Sustainable Groundwater Development for Improved Livelihoods in Sub-Saharan Africa*. Routledge, Oxfordshire, UK and New York, New York. DOI: 10.4324/9781003348788. ISBN 9781032391915. <https://www.routledge.com/Sustainable-Groundwater-Development-for-Improved-Livelihoods-in-Sub-Saharan/Pavelic-Villholth-Verma/p/book/9781032391915>.
- P107 2023 Pavelic, P., **K.G. Villholth**, and S. Verma: Identifying the barriers and pathways forward for expanding the use of groundwater for irrigation in Sub-Saharan Africa. In: Pavelic, P., K.G. Villholth, and S. Verma (Eds.): *Sustainable Groundwater Development for Improved Livelihoods in Sub-Saharan Africa*. Routledge, Oxfordshire, UK and New York, New York. DOI: 10.4324/9781003348788. ISBN 9781032391915. <https://www.routledge.com/Sustainable-Groundwater-Development-for-Improved-Livelihoods-in-Sub-Saharan/Pavelic-Villholth-Verma/p/book/9781032391915>.
- P106 2023 Gebregziabher, G., **K.G. Villholth**, M.A. Hanjra, M. Yirgab, and R.E. Namara: Cost-benefit analysis and ideas for cost sharing of groundwater irrigation: Evidence from North-Eastern Ethiopia. In: Pavelic, P., K.G. Villholth, and S. Verma (Eds.): *Sustainable Groundwater Development for Improved Livelihoods in Sub-Saharan Africa*. Routledge, Oxfordshire, UK and New York, New York. DOI: 10.4324/9781003348788. ISBN 9781032391915. <https://www.routledge.com/Sustainable-Groundwater-Development-for-Improved-Livelihoods-in-Sub-Saharan/Pavelic-Villholth-Verma/p/book/9781032391915>.
- P105 2023 Huggins, X, T. Gleeson, **K.G. Villholth**, J.C. Rocha, and J.S. Famiglietti: Groundwater landscapes: A global classification and mapping of groundwater's large-scale socioeconomic, ecological, and Earth system functions. *Water Resour. Res.* doi: 10.1029/2023WR036287.
- P104 2023 Perez, N., V. Singh, C. Ringler, H. Xie, T. Zhu, E.H. Sutanudjaja, and **K.G. Villholth**: The implications of ending groundwater overdraft for global food security. *Nature Sustainability*. <https://doi.org/10.21203/rs.3.rs-3056003/v1>.
- P103 2023 Chandrasekharan, K.M., **K.G. Villholth**, J.J. Kashaigili, G. Gebregziabher, and P.J. Mandela: *Land Cover Changes in the Upper Great Ruaha (Tanzania) and the Upper Awash (Ethiopia) River Basins and their Potential Implications for Groundwater Resources*. Colombo, Sri Lanka: International Water Management Institute (IWMI). 41p. (IWMI Research Report 184). doi: <https://doi.org/10.5337/2023.212>.



- P102 2023 Lindle, J., **K.G Villholth**, G.Y. Ebrahim, J.P.R. Sorensen, R.G. Taylor, and K.H. Jensen: Groundwater recharge influenced by ephemeral river flow and land use in the semi-arid Limpopo Province of South Africa. *Hydrogeol. J.*, 31, 2291–2306.  
<https://doi.org/10.1007/s10040-023-02682-x>.
- P101 2023 Rodella, A.-S., E. Zaveri, and F. Bertone (Eds.). *The Hidden Wealth of Nations: The Economics of Groundwater in Times of Climate Change*. Washington, DC: World Bank. License: Creative Commons Attribution CC BY 3.0 IGO. International collaborators: **K.G. Villholth** et al.
- P100 2023 Fensham, R.J., R. Adinehvand, S. Babidge, M. Cantonati, M. Currell, L. Daniele, A. Elci, D.M.P. Galassi, Á. de la Hera Portillo, S. Hamad, D. Han, H.A. Jawadi, J. Jotheri, B. Laffineur, A.H. Mohammad, A. Naqinezhad, A. Navidtalab, K. Nicoll, T. Odeh, V. Re, B. Sanjuan, V. Souza, L.E. Stevens, M. Tekere, E. Tshibalo, J. Silcock, J. Webb, B. van Wyk, M. Zamanpoore, and **K.G. Villholth**: Fellowship of the Spring: an initiative to document and protect the world's oases. *Sci. Total Environ.* 887 (2023) 163936.
- P99 2023 Scanlon, B.R., S. Fakhreddine, A. Rateb, I. de Graaf, J. Famiglietti, T. Gleeson, R. Q. Grafton; E. Jobbagy, S. Kebede, S.R. Kolusu, L.F. Konikow, D. Long, M. Mekonnen, H.M. Schmied, A. Mukherjee, A. MacDonald, R.C. Reedy, M. Shamsudduha, C.T. Simmons, A. Sun, R. Taylor, **K.G. Villholth**, C.J. Vörösmarty, and C. Zheng: Global water resources and the role of groundwater in a resilient water future. *Nat. Rev. Earth Environ.*, 4, 87-101.  
<https://doi.org/10.1038/s43017-022-00378-6>.
- P98 2022 Altchenko, Y, R. Biancalani, J.L.G. Aróstegui, **K.G. Villholth**, and A. Ducharme: Irrigation avec les eaux souterraines pour atteindre les Objectifs de Développement Durable sur l'éradication de la faim: espoirs et limites pour l'Afrique Sub-Saharienne. *Géologues*, 215, 75-81. ISSN 0016.7916.
- P97 2022 **Villholth, K.G.**, N. Nyambe, E. Kaseke, N. Moleele, and P. Ramoeli: Transboundary groundwater and aquifer governance in the context of transfrontier conservation areas - an opportunity for synergy in Southern African. ISARM 2021. In: UNESCO: *Transboundary Aquifers: Challenges and the Way Forward*. Sanchez, R. (Ed). Paris, UNESCO. ISBN 978-92-3-100563-3. <https://unesdoc.unesco.org/ark:/48223/pf0000383775>.
- P96 2022 Alam, M.F., P. Pavelic, **K.G. Villholth**, A. Sikka, and S. Pande: Impact of high-density managed aquifer recharge implementation on groundwater storage, food production and resilience: A case from Gujarat, India. *J. Hydrol. Reg. Stud.* doi.org/10.1016/j.ejrh.2022.101224.
- P95 2022 Muchingami, I., A. Mkali, T. Kanyerere, L. Vinqi, Y. Xu, K. Pietersen, K.H. Jensen, **K.G. Villholth**, and R. Whitehead: Review: Groundwater resource occurrence in Hout river gneiss crystalline basement formation in the Limpopo Basin, South Africa. *J. African Earth Sci.*, <https://doi.org/10.1016/j.jafrearsci.2022.104593>.
- P94 2022 Geris, J., J.-C. Comte, F. Franchi, A.K. Petros, S. Tirivarombo, A.T. Selepeng, and **K.G. Villholth**: Surface water-groundwater interactions and local land use control water quality impacts of extreme rainfall and flooding in a vulnerable semi-arid region of Sub-Saharan Africa. *J. Hyd.*, 609, 127834.
- P93 2022 Pavelic, P., D. Suhardiman, O. Keovilignavong, C. Clément, J. Vinckevleugel, S.M. Bohsung, K. Xiong, L. Valee, M. Viossanges, S. Douangsavanh, T. Sotoukee, **K.G. Villholth**, B.R. Shivakoti, and K. Vongsathiane: Assessment of options for small-scale groundwater irrigation in Lao PDR. Chapter 19. In: Re, V., R.I. Manzione, T.A. Abiye, A. Mukherji, and A. MacDonald (Eds.): *Groundwater for Sustainable Livelihoods and Equitable Growth*. IAH-BGID Book. ISBN 9780367903862.
- P92 2022 Healy, A., M. Tijani, J. Grönwall, M. Eichholz, **K.G. Villholth**, F. Mwango, K. Danert, K. Upton, D. Lapworth, M. Lalika, and C. Gicheruh: *Urban Groundwater in Africa: a dialogue for resilient towns and cities*. AMCOW Pan-African Groundwater Programme (APAGroP). Abuja Nigeria. ISBN 978-978-56367-4-4.



- P91 2022 African Ministers' Council on Water (AMCOW), International Water Management Institute (IWMI), and British Geological Survey (BGS): Groundwater for Africa's Resilience and Socioeconomic Transformation. A Call for greater attention to investing in groundwater to sustainably meet growing water demands under global environmental change. High-level Summary of White Paper. ISBN 978-978-56367-5-2. <https://knowledgehub.amcow-online.org/resource/groundwater-for-africas-resilience-and-socioeconomic-transformation> (French version also available: <https://knowledgehub.amcow-online.org/resource/les-eaux-souterraines-pour-la-resilience-et-la-transformation-socio-economique-de-lafrique>).
- P90 2022 Stephan, R.M., A. Aureli, A. Dumont, A. Lipponen, S. Tiefenauer-Linardon, C. Fraser, A. Rivera, S. Puri, S. Burchi, G. Eckstein, C. Brethaut, Z. Khayat, **K.G. Villholth**, L. Witmer, R. Martin-Nagle, A. Milman, F. Sindico, and J. Dalton: Transboundary aquifers. In: UNESCO and UN-Water: The United Nations World Water Development Report 2022. *Groundwater: Making the Invisible Visible*. Paris, France. UNESCO. Chapter 12, pp. 171-179. ISBN 978-92-3-100507-7. <https://unesdoc.unesco.org/ark:/48223/pf0000380721>.
- P89 2022 Taylor, R., A. Aureli, D. Allen, D. Banks, **K.G. Villholth**, and T. Stigter: Groundwater, aquifers and climate change. In: UNESCO and UN-Water: The United Nations World Water Development Report 2022: *Groundwater: Making the Invisible Visible*. Paris, France. UNESCO. Chapter 7, pp. 101-114. ISBN 978-92-3-100507-7. <https://unesdoc.unesco.org/ark:/48223/pf0000380721>.
- P88 2022 Gleeson, T., X. Huggins, R. Connor, P. Arrojo-Agudo, E.V. Suñé, **K.G. Villholth**, M. Rohde, J. van der Gun, D. Kremer, M. Manzano, L. Scrinzi, G. Arduino, T.C. Resende, N. Moosdorf, V. Walsh, and A. Harjung: Groundwater and ecosystems. In: UNESCO and UN-Water: The United Nations World Water Development Report 2022. *Groundwater: Making the Invisible Visible*. Paris, France. UNESCO. Chapter 6, pp. 89-100. ISBN 978-92-3-100507-7. <https://unesdoc.unesco.org/ark:/48223/pf0000380721>.
- P87 2022 England, M. and **K.G. Villholth**: Groundwater and agriculture. In: UNESCO and UN-Water: The United Nations World Water Development Report 2022. *Groundwater: Making the Invisible Visible*. Paris, France. UNESCO. Chapter 3, pp. 47-58. ISBN 978-92-3-100507-7. <https://unesdoc.unesco.org/ark:/48223/pf0000380721>.
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#### Conference Papers, Reports, Policy briefs, Invited Talks, Internet Blogs, Interviews, and Videos

- R285 2025 **Villholth, K.G.**: Groundwater for water security and resilience. Invited Keynote. Water Summit 2025. International Conference on Sustainable Groundwater Management for Societal Uses and Eco-System Services. Manav Rachna International Institute of Research and Studies, Faridabad, India. Nov 20-21, 2025.
- R284 2025 **Villholth, K.G.**, N. Smith, S. Jessen, M. Dippenaar, S. Senbore, E. Bjerre, and K.H. Jensen: Occurrence of organic micropollutants in a Managed Aquifer Recharge scheme supplied by treated wastewater in the city of Polokwane, Republic of South Africa. 7th SADC Groundwater Conference. Investing in Groundwater for Climate Action. Johannesburg, South Africa. Nov 19-21, 2025.
- R283 2025 Bjerre, E., J. Koch, K. Dalum, N. Smith, **K.G. Villholth**, T. Sonneborg, and K.H. Jensen: Estimating groundwater recharge variability in time and space in a semi-arid South African catchment using machine learning. 7th SADC Groundwater Conference. Investing in Groundwater for Climate Action. Johannesburg, South Africa. Nov 19-21, 2025.
- R282 2025 Smith, N., S. Jessen, **K.G. Villholth**, M. Barnett, S. Sebore, E. Bjerre, and K.H. Jensen: Hydrochemical dynamics of the Polokwane managed aquifer recharge system and implications for the potable water supply. 7th SADC Groundwater Conference. Investing in Groundwater for Climate Action. Johannesburg, South Africa. Nov 19-21, 2025.
- R281 2025 **Villholth, K.G.**: The role of Managed Aquifer Recharge (MAR) in providing water security globally. Podcast with adelfi in the podcast series under the Trend Observatory on Water, by the Swiss Agency for Development and Cooperation (SDC). <https://hazu.swiss/deza/trend-observatory-on-water/media/agKbZHvA7GCD5goo5spY>.
- R280 2025 Bjerre, E., J. Koch, W.K. Dalum, **K.G. Villholth**, T.O. Sonnenborg, K.H. Jensen: Spatio-temporal variability of groundwater recharge in a semi-arid South African catchment under climate change: Insights from long-term observations and machine learning. EGU General Assembly, Vienna, Austria & Online, Apr 27-May 02, 2025.
- R279 2024 **Villholth, K.G.**: Global groundwater challenges and solutions. Invited Keynote. Swiss Agency for Development and Cooperation (SDC)/Skat/RésEAU Learning Journey on Groundwater. Launch event. Oct 20, 2024 (virtual).
- R278 2024 **Villholth, K.G.**: What is standing in the way of global food security from groundwater – and how to move on informed action? Invited Keynote to the Pardee Keynote Symposia. Geological Society of America (GSA): Connects 2024. Water In Our Changing World. Anaheim, California, USA, Sep 22-25, 2024.

- R277 2024 Huggins, X., T. Gleeson, **K.G. Villholth**, J.C. Rocha, and J.S. Famiglietti: Groundwaterscapes - A global application of a new conceptual framing to understand groundwater systems as social-ecological systems. 51<sup>st</sup> IAH Congress, Interacting Groundwater. Davos, Switzerland, Sep 08-13, 2024.
- R276 2024 Aureli, A., N. Kukuric, P. Lachassagne, S. Puri, C. Thouin, G. Toro, and **Karen G. Villholth**. United Nations Framework Classification for Resources (UNFC) Draft Supplemental Groundwater Specifications (DSGS) - A risky and counterproductive proposal. 51<sup>st</sup> IAH Congress, Interacting Groundwater. Davos, Switzerland, Sep 08-13, 2024.
- R275 2024 **Villholth, K.G.**: Groundwater for Resilience and Socioeconomic Transformation in Africa. Invited Keynote (online). International Seminar, Centre for Ground Water Studies: Impacting Groundwater by Climate Change, Mining, Urban Mining and Chemical Contamination - Successful Mitigation Solutions. Kolkata, India, Jan 03-04, 2024.
- R274 2023 Lapworth, D.J., K. Danert, M. Eichholz, C. Gicheruh, J. Gronwall, A. Healy, S. Kebede, M.C.S. Lalika, F. Mwango, **K.G. Villholth**, M Tijani: Urban Groundwater Quality in Africa: Benefits and Challenges. AMCOW Pan-African Groundwater Programme (APAGroP), 3 pp. <https://nora.nerc.ac.uk/id/eprint/536273/>
- R273 2023 Puri, S., **K.G. Villholth**, A. Aureli, A. Rivera, A. Dumont: Conjunctive management of water resources. Technical note. UNECE Global Workshop on Conjunctive Management of Surface Water and Groundwater: National to Transboundary Level. Geneva, Switzerland, Oct 16-17, 2023.
- R272 2023 **Villholth, K.G.**: Considerations of Conjunctive Management in Current International Water Treaties - A reflective review. UNECE Global Workshop on Conjunctive Management of Surface Water and Groundwater: National to Transboundary Level. Geneva, Switzerland, Oct 16-17, 2023.
- R271 2023 Puri, S., **K.G. Villholth**, A. Aureli, A. Rivera, and A. Dumont: Conjunctive Management of Water Resources. Technical Note. Global Workshop on Conjunctive Management of Surface Water and Groundwater: National to Transboundary Level. Geneva, Switzerland & Online, Oct 16-17, 2023.
- R270 2023 Bjerre., E., K. Thage., A. Aaes., **K.G. Villholth.**, J. Koch., R. Scheider., T. Sonnenborg., and K. Jensen: Integrated Modelling of the Hydrological Dynamics of the Semi-arid Hout-Sand Catchment, South Africa. 50<sup>th</sup> IAH Congress, Groundwater: A Matter of Scale. Cape Town, South Africa, Sep 18-22, 2023.
- R269 2023 **Villholth, K.G.**: Groundwater: Achieving Global Development Goals. Podcast in the series Water Resources Podcast with Bridget Scanlon, by the Bureau of Economic Geology, the Jackson School of Geosciences at the University of Texas at Austin in partnership with the National Academy of Engineering. [https://www.youtube.com/watch?v=Z\\_BRZr9fpn4](https://www.youtube.com/watch?v=Z_BRZr9fpn4).
- R268 2023 **Villholth, K.G.** et al.: Illegal pesticide use in developing countries: risks and solutions. Experts' Opinions. DevelopmentAid. <https://www.developmentaid.org/news-stream/post/160678>.
- R267 2023 S.E. Bunn, M. Porto, B. Arheimer, A. Bahri, A. Bhaduri, W. Buytaert, C. Cudennec, A. Mishra, T. Oki, J. Pomeroy, V. Srinivasan, O. Ünver, **K.G. Villholth**, C. Vörösmarty, Z. Yu, and M. Zalewski: A Science-based Global Water Assessment Mechanism. UNESCO - Sustainable Water Future Program Task Force on: Science towards Supporting SDG6 and Other Related SDGs. Blueprint Paper – March 8, 2023.
- R266 2023 Huggins, X., T. Gleeson, **K.G. Villholth**, J. Rocha, and J. Famiglietti: Global Groundwater Archetypes: A New Global System Typology of Groundwater Interactions with Social and Ecological Systems and an Outlook for Sustainable Development. EGU General Assembly, Vienna, Austria & Online, Apr 23-28, 2023.
- R265 2023 **Villholth, K.G.**: Transboundary Aquifers – What Do We Know and How Can these Water Resources Bring Cooperation rather than Conflict? Invited Keynote. IAH - Irish Group. Proceedings of the 43<sup>rd</sup> Annual Conference. 'Groundwater & Planning'. Tullamore, Ireland, April 18-19, 2023.

- R264 2023 **Villholth, K.G.:** Groundwater: An Invisible Cross-Sectoral Fundament for Implementation of the Water Action Agenda. Introductory Keynote. High-level side event: 'Groundwater: An Invisible Cross-Sectoral Fundament for Implementation of the Water Action Agenda', UN 2023 Water Conference 'Uniting the World for Water', New York, New York, Mar 22-24, 2023, <https://media.un.org/en/asset/k10/k10g1jmx8>.
- R263 2023 Sood, A., **K.G. Villholth**, and R. Biancalani: Estimation of Sustainable Groundwater Abstraction using GEFIS. Poster. 2<sup>nd</sup> WASAG (Water Scarcity in Agriculture by FAO) International Forum. Making Agriculture Resilient for Climate Change: Water Scarcity, an Opportunity for Action and Collaboration. Praia, Cabo Verde, West Africa, 7-10 February 2023.
- R262 2023 UNESCO: Highlights and Call for Commitments. UN-Water Groundwater Summit, Dec 06-08, 2022. <https://unesdoc.unesco.org/ark:/48223/pf0000385296>.
- R261 2022 **Villholth, K.G.:** Groundwater and Dependent Ecosystems - Co-Management and Protection for Sustainable Development in SADC and Beyond. Invited Keynote. 5<sup>th</sup> SADC Groundwater Conference. Groundwater: Making the Invisible Visible for Socio-economic Development. Windhoek, Namibia. Nov 16-18, 2022. <https://conference.sadc-gmi.org/5th-sadc-groundwater-conference/>.
- R260 2022 **Villholth, K.G.:** Groundwater for Sustainable Development - Embracing the Challenges and Strengthening the Synergies. Invited opening talk, Groundwater Forum. IWA Congress and Exhibition. 'Shaping Our Water Future - Water for Smart Liveable Cities'. Bella Center, Copenhagen, Denmark, Sep 12-15, 2022.
- R259 2022 **Villholth, K.G.:** Groundwater: Bridging Science and Policy. Invited panelist. World Water Week, Stockholm, Sweden, Aug 23-25, 2022 (virtual). <https://worldwaterweek.org/event/10322-groundwater-bridging-science-and-policy>.
- R258 2002 **Villholth, K.G.:** Groundwater Recharge through Abandoned Wells. Invited panelist. WaterAid. Webinar. Jul 22, 2022.
- R257 2022 **Villholth, K.G.:** Transboundary Aquifer Resources - Progress on Knowledge and Cooperation. African Regional Consultations in preparation for the Mid-Term Review of the International Water Action Decade 'Water and Sustainable Development', 2018-2028 (virtual). Jun 13-14, 2022. <https://www.uneca.org/events/african-climate-policy-centre/african-regional-consultations-on-the-mid-term-review-of-the->
- R256 2022 Alam, M.F., P. Pavelic, A. Sikka, **K.G. Villholth**, and S. Pande: Impact of large-scale managed aquifer recharge in sustaining agricultural groundwater use: A case study of shallow hard-rock aquifer region of western India, 11<sup>th</sup> IAHS-AISH Scientific Assembly 2022, Montpellier, France, May 29-Jun 03, 2022, IAHS2022-638, <https://doi.org/10.5194/iahs2022-638>.
- R255 2022 Altchenko, Y., **K.G. Villholth**, and A. Ducharme: Mapping sustainable irrigation development potential with renewable groundwater in Africa, 11<sup>th</sup> IAHS-AISH Scientific Assembly 2022, Montpellier, France, May 29-Jun 03, 2022, IAHS2022-27, <https://doi.org/10.5194/iahs2022-27>.
- R254 2022 **Villholth, K.G.:** One Water - Why and How to Engage Youth in Global Water Action? Global Changes and Water Resources: Past, Present and Future. Workshop. Pisa, Univ. of Pisa, Earth Sciences Dept., Pisa, Italy, May 26-27, 2022.
- R253 2022 Biancalani, R., **K.G. Villholth**, and A. Sood: Background Information and Methodology to Support Estimation of Sustainable Groundwater Abstraction using GEFIS (Global Environmental Flows Information System). UNESCO Conference: Groundwater, Key to the Sustainable Development Goal. Paris, France, May 18-20.
- R252 2022 **Villholth, K.G.:** Global Aspects of Groundwater Quality: Importance, Methods, and New Initiatives. PI RURAL Groundwater Dialogue Seminar: 'Aspects of Sustainable Groundwater Management and Use' (virtual). China-Europe Water Platform. May 17, 2022.

- R251 2022 **Villholth, K.G.**, J.R. Lindle, P. Mukuyu, M.S. Magombeyi, and N. Namafe: A Transboundary Diagnostic Analysis of the Kwando River System - A Key Strategic Resource for the Kavango Zambezi Transfrontier Conservation Area. Sustainable Groundwater Development and Management for Humans, Wildlife, and Economic Growth in the Kavango Zambezi Transfrontier Conservation Area (KAZA-GROW). Project report. April 2022. 175 pp.
- R250 2022 **Villholth, K.G.**: Role of Groundwater in Food Security from Local to Global Scale - Climate-related Risks and Resilient Solutions. Global Center on Adaptation. Webinar series. 'Climate Adaptation in Agriculture – Water for Food Security'. Apr 05, 2022. <https://www.youtube.com/watch?v=5jF7FrYwErQ>.
- R249 2022 **Villholth, K.G.**: Groundwater for Africa's Resilience and Socioeconomic Transformation. IWHR, IAHR, UNESCO, GWP World Water Day 2022 webinar 'Making the Invisible Visible'. Jun 30, 2022. <https://www.iahr.org/video/clip?id=1089>.
- R248 2022 **Villholth, K.G.**: The Role of Groundwater in Global Food Security - Need for serious re-appraisal. Vanndagen/World Water Day 2022 webinar. IAH International Association of Hydrogeologists, Norwegian Chapter. Mar 22, 2022.
- R247 2022 **Villholth, K.G.**: Groundwater and the Untapped Potential for Building Climate Resilience in West Africa. IWMI-Ghana World Water Day 2022 webinar 'Promoting Sustainable Groundwater Irrigation for Building Climate Resilience in West Africa. Mar 18, 2022.
- R246 2022 **Villholth, K.G.** et al.: Large-scale Water Transfer and Managed Aquifer Recharge. IWRA-GRIPP webinar. Co-organizer and moderator. <https://www.iwra.org/groundwater-success-stories-webinar3/>.
- R245 2022 **Villholth, K.G.**: Groundwater for peace and stability. Invited Panelist. 2<sup>nd</sup> IGAD Water Forum (hybrid) 'Groundwater for Resilience', Jan 25-27, 2022.
- R244 2022 **Villholth, K.G.**: Groundwater for climate change and drought resilience. Invited Keynote. 2<sup>nd</sup> IGAD Water Forum (hybrid) 'Groundwater for Resilience', Jan 25-27, 2022.
- R243 2022 O'Brien, G.; C. Dickens, M. Wade, R. Stassen, V. Wepener, G. Diedericks, J. MacKenzie, A. Kaiser, B. van der Waal, **K.G. Villholth**, G. Ebrahim, V. Dlamini, M. Magombeyi: E-flows for the Limpopo River Basin: Risk of Altered Flows to the Ecosystem Services. Project report prepared by the International Water Management Institute (IWMI) for the United States Agency for International Development (USAID). Colombo, Sri Lanka. 144 pp. (E-flows for the Limpopo River Basin: Report 8).
- R242 2022 O'Brien, G.; C. Dickens, M. Wade, R. Stassen, G. Diedericks, J. MacKenzie, A. Kaiser, B. van der Waal, V. Wepener, **K.G. Villholth**, G. Ebrahim, V. Dlamini, M. Magombeyi: E-flows for the Limpopo River Basin: Environmental Flow Determination. Project report prepared by the International Water Management Institute (IWMI) for the United States Agency for International Development (USAID). Colombo, Sri Lanka. 209 pp. (E-flows for the Limpopo River Basin: Report 7).
- R241 2022 O'Brien, G.; C. Dickens, R. Stassen, H. Erasmus, S. Herselman, B. van der Waal, V. Wepener, H. Pearson, H. LeRoux, **K.G. Villholth**, G. Ebrahim, M. Magombeyi, E. Riddell, and R. Petersen: E-flows for the Limpopo River Basin: present ecological state - Drivers of Ecosystem Change. Project report prepared by the International Water Management Institute (IWMI) for the United States Agency for International Development (USAID). Colombo, Sri Lanka. 296 pp. (E-flows for the Limpopo River Basin: Report 5).
- R240 2021 Dickens, C.; G. O'Brien, R. Stassen, B. van der Waal, J. MacKenzie, N. Eriyagama, **K.G. Villholth**, G. Ebrahim, M. Magombeyi, V. Wepener, S. Gerber, A. Kaiser, G. Diedericks: E-flows for the Limpopo River Basin: Specialist Literature and Data Review. Project report prepared by the International Water Management Institute (IWMI) for the United States Agency for International Development (USAID). Colombo, Sri Lanka. 252 pp. (Eflows for the Limpopo River Basin: Report 4).
- R239 2021 Lindle, J.R., **K.G. Villholth**, G.Y. Ebrahim, J.P.R. Sorensen, R.G. Taylor, and K.H. Jensen: Groundwater recharge controlled by ephemeral river flow, land use and climate in the semi-arid Limpopo River Basin of South Africa. AGU Fall Meeting (hybrid). New Orleans, Louisiana, USA, Dec 13-17, 2021.



- R238 2021 Magombeyi, M. and **K.G. Villholth**: Water Scarcity Vulnerability Map of the Kwando River Basin and Kwando River Wildlife Dispersal Area. Sustainable Groundwater Development and Management for Humans, Wildlife, and Economic Growth in the Kavango Zambezi Transfrontier Conservation Area (KAZA-GROW). Project report. Sep. 2021. 28 pp.
- R237 2021 **Villholth, K.G.**: ISARM (International Shared Aquifer Resources Management) - Key messages, findings, recommendations and lessons learned. Rapporteur for the Closing Ceremony. ISARM 2021. International Conference on Transboundary Aquifers (hybrid) 'Challenges and the Way forward'. Paris, France, Dec 6-9, 2021. <https://www.youtube.com/watch?v=wNXqbD5DgHk>.
- R236 2021 **Villholth, K.G.**: Transboundary aquifer governance in the context of transfrontier conservation areas - An opportunity for synergy in the Southern African Development Community. ISARM 2021. International Conference on Transboundary Aquifers (hybrid) 'Challenges and the Way forward'. Paris, France, Dec 06-09, 2021. <https://www.youtube.com/watch?v=Epl0b8moFE0>.
- R235 2021 **Villholth, K.G.**: Groundwater-based natural infrastructure – The under-cover nature-based solution to resilience. Special Event: Nature-based Solutions and Climate Change: Harnessing the Power of Ecosystems for Adaptation and Mitigation. COP26 Water Pavilion, Glasgow, Scotland, Oct 31- Nov 12, 2021.
- R234 2021 **Villholth, K.G.**: Global Perspectives of Assessment of Groundwater Quality - Importance, Methods, and Potential. PI RURAL Groundwater Dialogue Seminar: Best Practices in Groundwater Quality Management' (virtual). China-Europe Water Platform. Oct 26, 2021.
- R233 2021 Sood, A. and **K.G. Villholth**: Background information and methodology to support estimation of sustainable groundwater abstraction using GEFIS. Appendix (not published).
- R232 2021 Groundwater Solutions initiative for Policy and Practice (GRIPP) - An initiative to bring groundwater to the forefront of sustainable development agendas. Promotional call to action video for World Water Week 2021. <https://www.youtube.com/watch?v=VipstB3IXf8&t=19s>.
- R231 2021 Magombeyi, M.S., J. Lautze, and **K.G. Villholth**: Agricultural water and nutrient management solutions to support smallholder irrigation schemes: Lessons from the Ramotswa Transboundary Aquifer Area, Limpopo River Basin, Limpopo River Basin. Project Brief.
- R230 2021 **Villholth, K.G.**: Groundwater for Food Security in Sub-Saharan Africa: Understanding the Local Context. UN Food Systems Summit. Science Days Side Event 'Transforming Food Systems from the Ground Up: The Potential of Groundwater in Achieving Food Security and Prosperity in Africa' (virtual). July 06, 2021. <https://www.slideshare.net/lfpri/groundwater-for-food-security-in-sub-Saharan-africa-understanding-the-local-context>.
- R229 2021 **Villholth, K.G.**: Striving for a Groundwater-secure Future in the Limpopo. Success story. Summary output of the RAMOTSWA Projects. <https://www.iwmi.cgiar.org/success-stories/striving-for-a-groundwater-secure-future-in-the-limpopo/>.
- R228 2021 UNESCO and IWMI: Transboundary Aquifer Cooperation and Management. Lessons Learned through the Stampriet and Ramotswa Projects. Policy Brief. <https://gripp.iwmi.org/wp-content/uploads/sites/2/2021/08/STAS-and-RAMOTSWA-Lessons-Learned.pdf>.
- R227 2021 Lindle, J., K.H. Jensen, **K.G. Villholth**, and R.G. Taylor: Inferring groundwater recharge associations among ephemeral rivers, land use and climate using multi-decadal groundwater level observations from the semi-arid Limpopo basin of South Africa. 15th Annual Danish Water Forum. Water Research Conference, 2021 (virtual).
- R226 2021 **Villholth, K.G.**, G.Y. Ebrahim, M. Magombeyi, K.H. Jensen, J. Goldin, and R. Mokomela: Integrated groundwater management in a semi-arid diverse stakeholder catchment in Limpopo Province, South Africa. 15th Annual Danish Water Forum. Water Research Conference (virtual), 2021.
- R225 2020 **Villholth, K.G.**, M. Signs et al.: *Groundwater - Critical for Sustainable Development*. GRIPP infographic (in [Burmese](#)).



- R224 2020 **Villholth, K.G.**, R. Klingbeil, and C.R. Vargas: Assessing Groundwater Quality: A Global Perspective - Importance, methods and potential data sources. 3<sup>rd</sup> SADC Groundwater Conference 'Enhancing Water and Food Security through Sustainable Groundwater Development in the SADC Region'. Nov 24-26, 2020 (virtual). <https://www.youtube.com/watch?v=oD74oO-luHY&list=PLjPkAyQGO8qOO5yxrHdbAJgwMHgyPyTtm&index=3>.
- R223 2020 **Villholth, K.G.**: Groundwater for food in Africa - Aiming for sustainability and equity. Invited Keynote. Special Session: Groundwater for Food in Africa – Current Opportunities and Challenges. 3<sup>rd</sup> SADC Groundwater Conference, Enhancing Water and Food Security through Sustainable Groundwater Development in the SADC Region. Nov. 24-26, 2020 (virtual). <https://www.youtube.com/watch?v=PpIV2nv-lVQ&list=PLjPkAyQGO8qOO5yxrHdbAJgwMHgyPyTtm&index=2>.
- R222 2020 **Villholth, K.G.**: Groundwater in a changing world - Buffer or burnout? Invited Keynote. IWRA Online Conference: Addressing Groundwater Resilience under Climate Change, Oct. 28-30, 2020 (virtual). [https://www.youtube.com/watch?v=WE0NVxdmMQs&list=PLewd3F\\_wZ4VhKl0NFGNwp-l7M53ZzPCGI&index=2](https://www.youtube.com/watch?v=WE0NVxdmMQs&list=PLewd3F_wZ4VhKl0NFGNwp-l7M53ZzPCGI&index=2).
- R221 2020 Zheng, Y., A. Ross, **K.G. Villholth**, and P. Dillon: Managing aquifer recharge: A showcase for resilience and sustainability. 17<sup>th</sup> Biennial Symposium on Managed Aquifer Recharge - Resilience through Recharge and Recovery. Oct. 05-09, 2020 (virtual). <https://www.youtube.com/watch?v=TgEOrfTQbk&feature=youtu.be>.
- R220 2020 **Villholth, K.G.**: Science-based knowledge and its dissemination to policy makers. Invited talk. Transboundary Water Resources – Hydro-Diplomacy, Cooperation, and International Water Law Conventions. Middle East Water Forum (MEWF) Webinar, Oct. 05, 2020 (virtual). <https://www.youtube.com/watch?v=gcZFk9mwAWo>.
- R219 2020 **Villholth, K.G.**: APAGroP knowledge brokering. Webinar series: Groundwater - Base Rock of Resilience. Webinar 1 of 3: AMCOW's Pan-Africa Groundwater Program – A Roadmap to Resilience. SWWW-2020. Stockholm, Sweden, Aug 23-28, 2020 (virtual). <https://www.youtube.com/watch?v=Uht1IW87T04&t=10s>.
- R218 2020 **Villholth, K.G.**: Global Groundwater Statement - Call to Action. Webinar series: Groundwater - Base Rock of Resilience. Webinar 2 of 3: Global Groundwater Sustainability Statement – Call to Action for Resilience. SWWW-2020. Stockholm, Sweden, Aug 23-28, 2020 (virtual). <https://www.youtube.com/watch?v=0ujmhC6ilyw>.
- R217 2020 Orengho, P. and **K.G. Villholth**: AMCOW Pan-African Groundwater Program (APAGroP): An overview and conceptual framework: Groundwater governance - From resource-to-tap and across scales and boundaries. 20<sup>th</sup> AfWA (African Water Association) International Congress & Exhibition, Kampala, Feb. 24-27, 2020.
- R216 2020 Lazurko, A., J. Lautze, and **K.G. Villholth**: *Joint Strategic Action Plan for the Ramotswa Transboundary Aquifer Area*. Project Brief. <http://conjunctivecooperation.iwmi.org/wp-content/uploads/sites/38/2020/04/Joint-Strategic-Action-Plan-for-the-Ramotswa-Transboundary-Aquifer-Area.pdf>
- R215 2019 Ebrahim, G.Y., F. Father, C. Hlatywayo, K. Keetile, P. Kenabatho, J. Lautze, M. Magombeyi, K. Majola, B. Matlhakoane, L. Modo. P. Mowaneng, P. Mugwangwavari, P. Mukuyu, B. Munyai, R. Mutepe, E. Netshitanini, B. Ngoni, W. Nyalungu, B. Nyikadzino, P. Pavelic, A. Petros, F. Ramusiya, F. Simba, and **K.G. Villholth**: Transboundary Diagnostic Analysis (baseline report) for the Tuli Karoo System. Conjunctive Management in SADC's Shared Waters: Generating Principles through Fit-for-Purpose Practice. Project report. Nov 2019. 127 pp. <http://conjunctivecooperation.iwmi.org/wp-content/uploads/sites/38/2020/05/Transboundary-Diagnostic-Analysis-of-the-Shar....pdf>

- R214 2019 Pavelic, P. and **K.G. Villholth**: *Research to Support Sustainable Groundwater Development and Governance in Laos*. Research Highlight Report. CGIAR Research Program on Water, Land and Ecosystems (WLE). Dec 2019.  
<https://cgspace.cgiar.org/bitstream/handle/10568/106671/Research%20to%20support%20sustainable%20groundwater%20development.pdf?sequence=5&isAllowed=y>.
- R213 2019 **Villholth, K.G.**, M. Signs et al.: *Groundwater - Critical for Sustainable Development*. GRIPP infographic: A [booklet](#) and an [online version](#).
- R212 2019 **Villholth, K.G.**: Local to global paths towards groundwater sustainability. Invited talk. Quest for Sustainability of Heavily Stressed Aquifers at Regional to Global Scales. Valencia, Spain, Oct 21-24, 2019.
- R211 2019 **Villholth, K.G.**: Managing Africa's groundwater resources through effective partnerships. Experts and Stakeholders' Workshop on the AMCOW Pan-African Groundwater Program (APAGroP). Nairobi, Kenya, Oct 01-02, 2019.
- R210 2019 Lindle, J., K.H. Jensen, **K.G. Villholth**, and R. Taylor: Inferring groundwater recharge associations to ephemeral rivers, land use and climate using multi-decadal groundwater level observations from the semi-arid Limpopo basin of South Africa. 46<sup>th</sup> IAH Congress, Groundwater Management and Governance - Coping with Water Scarcity. Malaga, Spain, Sep 22-27, 2019.
- R209 2019 Mozzi, G., M.F. Alam, P. Pavelic, **K.G. Villholth**, and C. Stefan: Multiscale impact of widespread managed aquifer recharge (MAR) implementation in the state of Gujarat, India. Proceedings paper. 46<sup>th</sup> IAH Congress, Groundwater Management and Governance - Coping with Water Scarcity. Malaga, Spain, Sep 22-27, 2019.  
[https://www.researchgate.net/profile/Otman-El-Mountassir/publication/358775472\\_46th\\_IAH\\_Congress\\_Groundwater\\_management\\_and\\_governance\\_-\\_coping\\_with\\_water\\_scarcity/links/6214dc846c472329dcfe0c2d/46th-IAH-Congress-Groundwater-management-and-governance-coping-with-water-scarcity.pdf#page=123](https://www.researchgate.net/profile/Otman-El-Mountassir/publication/358775472_46th_IAH_Congress_Groundwater_management_and_governance_-_coping_with_water_scarcity/links/6214dc846c472329dcfe0c2d/46th-IAH-Congress-Groundwater-management-and-governance-coping-with-water-scarcity.pdf#page=123).
- R208 2019 **Villholth, K.G.** and S. Puri: Institutions and Socio-Economic Perspectives. Keynote. Workshop on Future of Transboundary Aquifers: Research, Management, and Policy Directions. IAH Commission on Transboundary Aquifers. Pre-conference event at the IAH 46<sup>th</sup> IAH Congress, Groundwater Management and Governance - Coping with Water Scarcity. Malaga, Spain, Sep 22, 2019.
- R207 2019 **Villholth, K.G.**, M.F. Alam, and J. Podgorski: Human arsenic exposure risk via crop consumption and global food trade. Waterfuture Conference 'Towards a Sustainable Water Future'. Bengaluru, India, Sep 24-27, 2019.
- R206 2019 Alam, M.F., **K.G. Villholth**, P. Pavelic, A. Sikka, G. Mozzi, and C. Stefan: Impact of intensive MAR implementation on groundwater storage: Critical review and case study of Saurashtra, Gujarat. Waterfuture Conference 'Towards a Sustainable Water Future'. Bengaluru, India, Sep 24-27, 2019.
- R205 2019 **Villholth, K.G.**: Groundwater and climate change: challenges. Invited Keynote. Water Future Conference 'Towards a Sustainable Water Future'. Bengaluru, India, Sep 24-27, 2019.
- R204 2019 **Villholth, K.G.**: Solar Irrigation and the groundwater connection. Solar Irrigation in Southern Africa Think Tank Session. Centurion, South Africa, Sep 09, 2019.
- R203 2019 **Villholth, K.G.**: Groundwater and the SDGs - Interlinkages and supportive guideline development. Keynote. 2<sup>nd</sup> SADC Groundwater Conference, Groundwater Contribution to Achievement of Sustainable Development Goals in SADC Region, Johannesburg, South Africa, Sep 04-06, 2019.
- R202 2019 Ebrahim, G.Y., S. Trust, M. Magombeyi, **K.G. Villholth**, J. Lautze, G.-J. Nijsten, K. Keodumetse, P. Kenabatho, S. Mndaweni, and M. Moehadu: Assessing managed aquifer recharge potential in the RAMOTSWA transboundary aquifer area – a hydrogeological modelling approach. 2<sup>nd</sup> SADC Groundwater Conference, Groundwater Contribution to Achievement of Sustainable Development Goals in SADC Region, Johannesburg, South Africa, Sep 04-06, 2019.

- R201 2019 Ebrahim, G.Y., **K.G. Villholth**, J. Lautze, K. Keodumetse, P. Kenabatho, S. Mndaweni, N. Sivashni, and M. Moehadu: Hydrogeological model for the Ramotswa transboundary aquifer - How much do we know? 2<sup>nd</sup> SADC Groundwater Conference, Groundwater Contribution to Achievement of Sustainable Development Goals in SADC Region, Johannesburg, South Africa, Sep 04-06, 2019.
- R200 2019 **Villholth, K.G.**, M.F. Alam, and J. Podgorski: Human dietary exposure risk via crop consumption from arsenic-contaminated groundwater-irrigated areas and transmission through international trade. 2<sup>nd</sup> SADC Groundwater Conference, Groundwater Contribution to Achievement of Sustainable Development Goals in SADC Region, Johannesburg, South Africa, Sep 04-06, 2019.
- R199 2019 Kanyerere, T., **K.G. Villholth**, and J. Goldin: Using citizen science in groundwater data generation research to improve decision-making support on water information. 2<sup>nd</sup> SADC Groundwater Conference, Groundwater Contribution to Achievement of Sustainable Development Goals in SADC Region, Johannesburg, South Africa, Sep 04-06, 2019.
- R198 2019 **Villholth, K.G.**: Groundwater and the SDGs - Discerning interlinkages for sustainable outcomes. Invited talk. SDG trade-offs and synergies: Innovative methods and tools for improved decision making – GRoW Session at SWWW-2019. Stockholm, Sweden, Aug 25-30, 2019.
- R197 2019 **Villholth, K.G.** and N. Kukuric: GRIPP - Creating momentum for 2022. 3rd GRIPP Partners' Meeting. Stockholm, Sweden, Aug 25-30, 2019.
- R196 2019 **Villholth, K.G.**: Groundwater and climate resilience in SADC: Implications for ways forward in the Shire System. Close-off Workshop – Shire ConWat Project between Malawi and Mozambique. Johannesburg, South Africa, Jun 26, 2019.
- R195 2019 Stefan, C., L. Fuchs, **K.G. Villholth**, M. Gröschke, and J. Glass: *Innovative Ideas for Boosting Nature-based Solutions for Climate Change Adaptation*. Event Report. Open Space Workshop, 10<sup>th</sup> Water Research Horizon Conference, Hannover, Germany, Jun 18-19, 2019. [https://tu-dresden.de/bu/umwelt/hydro/inowas/ressourcen/dateien/2019-07-29\\_OSW\\_E\\_WRHC2019\\_Report.pdf?lang=en](https://tu-dresden.de/bu/umwelt/hydro/inowas/ressourcen/dateien/2019-07-29_OSW_E_WRHC2019_Report.pdf?lang=en).
- R194 2019 **Villholth, K.G.**: The role of groundwater in agriculture and tackling ecosystem trade-offs. Invited talk. 10<sup>th</sup> Water Research Horizon Conference. Hannover, Germany, Jun 18-19, 2019.
- R193 2019 **Villholth, K.G.**: Groundwater-based natural infrastructure - A missing component of nature-based Solutions. 10<sup>th</sup> Water Research Horizon Conference. Hannover, Germany, Jun 18-19, 2019.
- R192 2019 **Villholth, K.G.**: GRIPP – Groundwater Solutions Initiative for Policy and Practice. ISMAR10, Madrid, Spain, May 20-24, 2019.
- R191 2019 **Villholth, K.G.**: Groundwater-based natural infrastructure: a critical piece in supporting water security and resilience. ISMAR10, Madrid, Spain, May 20-24, 2019. <https://www.youtube.com/watch?v=cEhJh8Esj0k>.
- R190 2019 Alam, M.F., **K.G. Villholth**, P. Pavelic, and A. Sikka: Evaluating the multi-scalar impact of widespread MAR implementation on groundwater storage: A critical review and case study of Gujarat. ISMAR10, Madrid, Spain, May 20-24, 2019.
- R189 2019 **Villholth, K.G.**: Global Groundwater - Today and in the Future. Invited meeting with Grundfos, Bjerringbro, Denmark, May 02, 2019.
- R188 2019 **Villholth, K.G.**: Global Groundwater - and IWMI Engagement. Invited meeting with Grundfos, Bjerringbro, Denmark, May 02, 2019.
- R187 2019 **Villholth, K.G.**: Groundwater and sustainable development goals – Analysis of interlinkages. Ground Water SDG 6.6.1 Future Indicators Workshop. Invited talk. Dept. of Water and Sanitation (DWS), Roodeplaat, South Africa, Apr 15, 2019.
- R186 2019 Kolusu, S.R., M. Shamsudduha, M.C. Todd, R.G. Taylor, D. Seddon, J.J. Kashaigili, G.Y. Ebrahim, M.O. Cuthbert, J.P.R. Sorensen, **K.G. Villholth**, A.M. MacDonald, and D.A. MacLeod: The El Niño event of 2015-16: Climate anomalies and their impact on groundwater resources in East and Southern Africa. EGU General Assembly, Vienna, Austria, Apr 07-12, 2019.

- R185 2019 Geris, J., J.-C. Comte, F. Franchi, A.K. Petros, A.T. Selepeng, C.N. Kurugundla, and **K.G. Villholth**: Controls on recharge and water quality trends in response to floods in semi-arid Southern Africa. EGU General Assembly, Vienna, Austria, Apr 07-12, 2019.
- R184 2019 **Villholth, K.G.**: The Ramotswa experience in context. RAMOTSWA2 Project Closing Workshop, Gaborone, Botswana, Apr 09-11, 2019.
- R183 2019 **Villholth, K.G.**: REMSAN – A proposal for aquifer remediation and improved sanitation and water supply of the Ramotswa Transboundary Aquifer Area. RAMOTSWA2 Project Closing Workshop. Gaborone, Botswana, Apr 09-11, 2019.
- R182 2019 Lautze, L., **K.G Villholth**, G.Y. Ebrahim, P. Mukuyu, A. Lazurko, M. Majiwa, B. Munyai, and J. Sauramba: Conjunctive Water Management Report. Towards a Framework for Conjunctive Transboundary Water Management in the SADC Region. Dec 2019.
- R181 2019 Lautze, J., D. Saruchera, A. Lazurko, S. Hawkins, **K.G. Villholth**, G. Ebrahim, K. Gaogelwe, C. Nkile, T. Setloboko, B. Somolekae, P. Kenabatho, K. Keetile, M. Moehadu, S. Mndaweni, R. Mpe, K. Majola, R. Sekwele, and S. Gaebee: *Joint Strategic Action Plan for the Ramotswa Transboundary Aquifer Area*. Mar 2019.
- R180 2019 Chairuca, L., P. Chintengo, G.Y. Ebrahim, C. Fraser, J. Lautze, A. Lazurko, F. Macaringue, M. Magombeyi, N. Miranda, R. Mokomela, N. Mweso, M. Nkhata, P. Phiri, Z. Uka, B. van Koppen, and **K.G. Villholth**: Transboundary Diagnostic Analysis of the Shire River-Aquifer System. Conjunctive Water Resources Management in the Shire River Basin (Shire ConWat). Project report. Jan 2019. 145 pp.
- R179 2019 McGill, B.M., and **K.G. Villholth**: Enhancing Water Security in Southern Africa by Tackling Nitrate Contamination of Aquifers and Unraveling Links to Climate Change and Sanitation: A case from Ramotswa, Botswana. Project Brief. <http://conjunctivecooperation.iwmi.org/wp-content/uploads/sites/38/2019/05/Ramotswa-project-brief-Nitrates-and-Climate-change.pdf>.
- R178 2019 **Villholth, K.G.**: Introduction and current knowledge of hydrogeology of the Hout Catchment. 1st Multi-Stakeholder Workshop - Establishment of Citizen Science Enhancing Sustainable Groundwater Use in South Africa – ESGUSA, Polokwane, South Africa, Mar 07-08, 2019.
- R177 2019 **Villholth, K.G.**: Lessons learned from the RAMOTSWA Project. LIMCOM/SADC-GMI Meeting to launch the LIMCOM Groundwater Committee, Gaborone, Botswana, Feb 28-Mar 01, 2019.
- R176 2019 Magombeyi, M., **K.G. Villholth**, and R. Healy: Understanding Surface Water-Groundwater Interactions in Perennial Sub-humid Systems: A Study in the Letsitele River Catchment, Limpopo Basin, South Africa. Groundwater Recharge in the Limpopo River Basin Project. Final report.
- R175 2019 Cobbing, J. and **K.G. Villholth**: Adapting to Climate Change in the SADC Region - A Focus on Groundwater. SADC Research Paper. Jan 2019.
- R174 2018 Pavelic, P., T. Shah, S. Verma, **K.G. Villholth**, A. Shah, and I. Makin: Groundwater for Drought Resilience in South Asia: Management Options for Sustainable Outcomes. World Bank. South Asia Water Initiative (SAWI). Final Synthesis Report.
- R173 2018 **Villholth, K.G.** and J. Lautze: Conjunctive Management of Surface and Groundwater. Workshop on Groundwater and Sediment Assessment and Monitoring in the Cubango-Okavango River Basin, Maun Botswana, Oct 16-17, 2018.
- R172 2018 **Villholth, K.G.** and J. Cobbing: Adapting to Climate Change in the SADC Region. A Focus on Groundwater (Keynote). 1st SADC Groundwater Conference: Adapting to Climate Change in the SADC Region through Water Security – A Focus on Groundwater. Johannesburg, South Africa, Sep 26-28, 2018.
- R171 2018 Lazurko, A., G.Y. Ebrahim, R. Mokomela, **K.G. Villholth**, J. Lautze, R. Kalin and C. Fraser: Conjunctive water management in the transboundary Shire river-aquifer system between Malawi and Mozambique – A framework for co-management. 1st SADC Groundwater Conference: Adapting to Climate Change in the SADC Region through Water Security – A Focus on Groundwater. Johannesburg, South Africa, Sep 26-28, 2018.

- R170 2018 Magombeyi, M. and **K.G. Villholth**: Assessing surface water - groundwater interactions using multiple hydraulic, hydrochemical and baseflow analysis methods: A study in B81D quaternary catchment in Upper Limpopo Basin, South Africa. 1<sup>st</sup> SADC Groundwater Conference: Adapting to Climate Change in the SADC Region through Water Security – A Focus on Groundwater. Johannesburg, South Africa, Sep 26-28, 2018.
- R169 2018 Ebrahim, G.Y., **K.G. Villholth**, and M. Boulou: Supporting Sustainable Agricultural Groundwater Use in a Hard Rock Catchment, Hout, Limpopo Province, South Africa – Application of an Integrated Hydrogeological Model. 1<sup>st</sup> SADC Groundwater Conference: Adapting to Climate Change in the SADC Region through Water Security – A Focus on Groundwater. Johannesburg, South Africa, Sep 26-28, 2018.
- R168 2018 McGill, B. Y. Altchenko, P.K. Kenabatho, S.R. Sylvester, and **K.G. Villholth**: The Groundwater-Climate Change-Sanitation Nexus: A Case Study from Ramotswa, Botswana. 1<sup>st</sup> SADC Groundwater Conference: Adapting to Climate Change in the SADC Region through Water Security – A Focus on Groundwater. Johannesburg, South Africa, Sep 26-28, 2018.
- R167 2018 **Villholth, K.G.**: Cooperation on Transboundary Aquifers in SADC - Why, where, and where to? 3rd RAMOTSWA2 Joint Workshop, Pretoria, South Africa, Sep 19-20, 2018.
- R166 2018 **Villholth, K.G.**: Groundwater-Based Natural Infrastructure Solutions - An overview and outlook. SWWW, Water, Ecosystems and Human Development. Stockholm, Sweden, Aug 26-31, 2018.
- R165 2018 **Villholth, K.G.**: Groundwater-Based Natural Infrastructure Solutions - The Missing Link to Resilience? SWWW, Water, Ecosystems and Human Development. Stockholm, Sweden, Aug 26-31, 2018. [https://www.slideshare.net/IWMI\\_Media/groundwaterbased-natural-infrastructure-solutions-the-missing-link-to-resilience](https://www.slideshare.net/IWMI_Media/groundwaterbased-natural-infrastructure-solutions-the-missing-link-to-resilience).
- R164 2018 Pavelic, P., **K.G. Villholth**, and S. Verma: *Sustainable Groundwater Development for Improved Livelihoods in Sub-Saharan Africa*. IWRA. Water International, Policy brief, Number 9. May 2018.
- R163 2018 **Villholth, K.G.**: RAMOTSWA - An Evolving Case of Transboundary Aquifer Management. USAID Environment Officers Meeting. Glenburn Lodge, Muldersdrift, South Africa, May 16, 2018.
- R162 2018 Comte, J.-C., J. Geris, F. Franchi, A. Petros, A.T. Selepeng, C. Kurugundla, K. Dikgola, **K.G. Villholth**, G.Y. Ebrahim, J. Lautze, and T. Setloboko: Impacts of Extreme Floods on Groundwater Recharge and Contamination in Arid Regions: Lessons Learned from the Major 2017 Flood Event in Botswana. EGU General Assembly. Vienna, Austria, Apr 08 -13, 2018.
- R161 2018 Geris, J., J.-C. Comte, F. Franchi, A. Petros, A. Selepeng, K. Dikgola, C. Kurugundla, and **K.G. Villholth**: From Droughts to Floods in Sub-Saharan Regions; Spatial and Temporal Patterns in Hydrological Response and Water Quality. EGU General Assembly. Vienna, Austria, Apr 08 -13, 2018.
- R60 2018 **Villholth, K.G.**, A. Ross et al.: Groundwater-Based Natural Infrastructure. A dedicated website providing tools and cases of GBNI. <http://gripp.iwmi.org/natural-infrastructure/overview-on-groundwater-based-natural-infrastructure/>.
- R159 2018 Ebrahim, G.Y., M. Magombeyi, **K.G. Villholth**, J. Lautze, G.J. Nijsten, K. Keetile, P. Kenabatho, N. Sivashni, P. Makoba, S. Mndaweni, M. Moehadu, M. Gomo, B. Somolekae, and C. Nkile: Hydrogeological Modelling for Ramotswa Transboundary Aquifer. Resilience in the Limpopo Basin: The Potential Role of the Transboundary Ramotswa Aquifer Project.
- R158 2018 Ebrahim, G.Y., S. Trust, M. Magombeyi, **K.G. Villholth**, J. Lautze, G.-J. Nijsten, K. Keetile, P. Kenabatho, S. Mndaweni, M. Moehadu, M. Gomo, B. Somolekae, and C. Nkile: Assessing the Feasibility of Managed Aquifer Recharge in Ramotswa Transboundary Aquifer Using Hydrogeological Model. Resilience in the Limpopo Basin: The Potential Role of the Transboundary Ramotswa Aquifer Project.
- R157 2018 **Villholth, K.G.** Solar Irrigation and Groundwater Management. International Forum on Solar Technologies for Small-scale Agriculture & Water Management. FAO HQ, Rome, Italy Apr 12-13, 2018.



- R156 2017 Ebrahim, G.Y, S. Fathi, J. Lautze, N. Ansems, K.G. Villholth, G.-J. Nijsten, M. Magombeyi, S. Mndaweni, P. Kenabatho, M. Moehadu, K. Keodumetse, M. Gomo, B. Somolekae, C. Nkile, and D. Kealeboga, 2017. Review of Managed Aquifer Recharge (MAR) Experience in Africa and MAR Suitability Mapping for Ramotswa Transboundary Aquifer Area. <http://conjunctivecooperation.iwmi.org/wp-content/uploads/sites/38/2019/02/Review-of-MAR-experience-in-Africa.pdf>.
- R155 2017 Lefore, N., S. Hawkins, **K.G. Villholth**, and J. Lautze: Considering Social and Gender Aspects in Transboundary Groundwater Cooperation. Project brief. Colombo, Sri Lanka: International Water Management Institute (IWMI).
- R154 2017 McGill, B.M., Y. Altchenko, P.K. Kenabatho, S.R. Sylvester, **K.G. Villholth**: Complex interactions among climate change, sanitation, and groundwater quality: A case study from Ramotswa, Botswana. 2017 American Geophysical Union Fall Meeting. New Orleans, Dec 11-15, 2017.
- R153 2017 **Villholth, K.G.**: Groundwater Solutions Initiative for Policy and Practice - A Global Partnership for Sustainable Groundwater Management. 7th International Ground Water Conference, IGWC-2017. Ground Water Vision 2030. Water Security, Challenges and Climate Change Adaptation. ICAR, NASC, New Delhi, India, Dec 11-13, 2017.
- R152 2017 **Villholth, K.G.**: The Role of Groundwater in Achieving Water Security and Approaches to its Governance (Keynote). Water Security and Climate Change Conference, Cologne, Germany, Sep 18-21, 2017.
- R151 2017 **Villholth, K.G.**: Groundwater as the 21st Century Research Challenge - For Climate Change Adaptation and Sustainable Management. Meeting at BGR, Hannover, Germany, Sep 22, 2017.
- R150 2017 **Villholth, K.G.**: Groundwater: From Research Challenges to Solutions - Research gaps and options for collaboration. 8th Water Research Horizon Conference, Hamburg, Germany, Sep 19-20, 2017.
- R149 2017 **Villholth, K.G.**: Groundwater as the 21st Century Research Challenge - For Climate Change Adaptation and Sustainable Management. 8th Water Research Horizon Conference, Hamburg, Germany, Sep 19-20, 2017.
- R148 2017 **Villholth, K.G.**: Global Outlook for Groundwater. Australasian Groundwater Conference 'Groundwater Futures - Science to Practice', University of New South Wales, Sydney, Australia, Jul 11-13, 2017.
- R147 2017 **Villholth, K.G.**: Groundwater Solutions Initiative for Policy and Practice (GRIPP). Australasian Groundwater Conference 'Groundwater Futures - Science to Practice', University of New South Wales, Sydney, Australia, Jul 11-13, 2017.
- R146 2017 Lautze, J., S. Ramogale, T. Setloboko, P. Kenabatho, G.-J. Nijsten, S. Hawkins, G. Ebrahim, **K.G. Villholth**: From Scientific Understanding to a Participative Framework for Joint Action: the RAMOTSWA Project. IAHS 2017 Scientific Assembly, Port Elizabeth, South Africa, Jul 10-14, 2017.
- "Water and Development: scientific challenges in addressing societal issues".
- R145 2017 Sekwele, R., S. Mndaweni, K. Keetile, T. Setloboko, P. Kenabatho, M. Moehadu, G.-J. Nijsten, Y. Altchenko, J. Lautze, **K.G. Villholth**: Transboundary Cooperation on the Ramotswa Aquifer – and Learning for the SADC Region. World Water Day Summit and Expo, Durban, South Africa, Mar 22-24, 2017.
- R144 2017 **Villholth, K.G.**: Transboundary Cooperation on the Ramotswa Aquifer – and Learning for the SADC Region. SANC UNESCO IHP Symposium, Fostering learning, inspiration and wonder – and provoke conversations that matter, Pretoria, South Africa, Mar 14, 2017.
- R143 2017 **Villholth, K.G.**: Groundwater in Global Food Security - Current Knowledge and Outlook. Global Forum for Food and Agriculture 2017. Berlin, Germany, Jan 19 – 21, 2017.
- R142 2017 CGIAR Research Program on Water, Land and Ecosystems (WLE): Building resilience through sustainable groundwater use. Colombo, Sri Lanka: International Water Management Institute (IWMI). CGIAR-WLE. 12p. (WLE Towards Sustainable Intensification: Insights and Solutions Brief 1). DOI: 10.5337/2017.208.



- R141 2016 Sood, A., **K.G. Villholth**, V. Smakhtin, N. Eriyagama, N. Liyanage, Y. Wada, G.Y. Ebrahim, C. Dickens: Global Distributed Groundwater Contribution to Environmental Flows and Sustainable Groundwater Abstraction Limits for Sustainable Development Goals. 43rd IAH Congress, le Corum, Montpellier, France, Sep 25-29, 2016.
- R140 2016 Altchenko, Y., **K.G. Villholth**, A. Ducharme: Mapping Irrigation Potential from Renewable Groundwater in Africa - A Development Perspective. 43rd IAH Congress, le Corum, Montpellier, France, Sep 25-29, 2016.
- R139 2016 **Villholth, K.G.**, A. Sood, N. Liyanage, T. Zhu, and Y. Wada: Global Food Production - Share from Sustainable and Unsustainable Groundwater Use. 43rd IAH Congress, le Corum, Montpellier, France, Sep 25-29, 2016.
- R138 2016 Altchenko, Y., **K.G. Villholth**, N. Lefore, G.Y. Ebrahim, M. Hanjra, G.-J. Nijsten, A. Genco, K. Pierce, P. Kenabatho, B. Mosethi, H. Masundire, T. Moyo, M. Gomo, S. Mndaweni, N.I. Tobani, and K. Keetile: Towards Integrated Transboundary Groundwater Management in Southern Africa - The Case of the Ramotswa Aquifer Shared between South Africa and Botswana. 43rd IAH Congress, le Corum, Montpellier, France, Sep 25-29, 2016.
- R137 2016 **Villholth, K.G.**, A. Sood, V. Smakhtin, N. Eriyagama, N. Liyanage, Y. Wada, G.Y. Ebrahim, and C. Dickens: Groundwater in the SDGs – Groundwater Contribution to Environmental Flows and Abstraction Limits - a global distributed assessment for the SDGs. 35<sup>th</sup> International Geological Congress, Cape Town, South Africa, 27 Aug - 04 Sep. 2016.
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- R134 2016 Ebrahim, G.Y., **K.G. Villholth**, and M. Boulos: Modelling Groundwater Flow, Recharge and Dynamics of the Dendron Area, Limpopo River Basin, South Africa. 35<sup>th</sup> International Geological Congress, Cape Town, South Africa, 27 Aug - 04 Sep. 2016.
- R133 2016 Ebrahim, G.Y. and **K.G. Villholth**: Estimating Shallow Groundwater Availability at the Catchment Scale Using Streamflow Recession and Instream Flow Requirements of Rivers in South Africa. 35<sup>th</sup> International Geological Congress, Cape Town, South Africa, 27 Aug - 04 Sep. 2016.
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- R130 2016 **Villholth, K.G.**, A. Sood, N. Liyanage, and T. Zhu: Contribution of Sustainable and Unsustainable Groundwater Use to Global Food Production. Towards Sustainable Groundwater in Agriculture - 2nd International Conference Linking Science and Policy. Hyatt Regency, San Francisco, California, USA, June 28-30, 2016. Video: [https://www.youtube.com/watch?v=4oR3YKJv0Xc&index=6&list=PLZC-5vj9\\_JABzB82RCng8MPDHJxj5KzWB](https://www.youtube.com/watch?v=4oR3YKJv0Xc&index=6&list=PLZC-5vj9_JABzB82RCng8MPDHJxj5KzWB).
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- R128 2016 **Villholth, K.G.** and Y. Altchenko: Groundwater Availability for Irrigation in Sub-Saharan Africa. 2016 Water for Food Global Conference. Nebraska Innovation Campus, Lincoln, Nebraska, USA, 24-26 April, 2016.

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- R124 2016 **Villholth, K.G.**: Groundwater Trends, Challenges and Solutions - From Global to Local. Grundfos Groundwater Days, Aarhus Waterworks, Aarhus DK, Feb 08-12, 2016.
- R123 2015 **Villholth, K.G.**, Y. Altchenko, G.-J. Nijsten: Resilience in the Limpopo Basin: The Potential Role of the Transboundary Ramotswa Aquifer Project. Stakeholder Inception Report.
- R122 2015 **Villholth, K.G.**: The Ramotswa project - Building a joint vision for a shared aquifer. 14th Ground Water Division of the Geological Society of South Africa Conf. and Exhibition, 'From Theory to Action', Sep 21-23, 2015, Muldersdrift, South Africa.
- R121 2015 Altchenko, Y. and **K.G. Villholth**: Mapping irrigation potential from renewable groundwater in Africa - A quantitative hydrological approach. 14th Ground Water Division of the Geological Society of South Africa Conf. and Exhibition, 'From Theory to Action', Sep 21-23, 2015, Muldersdrift, South Africa.
- R120 2015 G.Y. Ebrahim, and **K.G. Villholth**: Estimating groundwater availability at catchment scale using streamflow recession and instream flow requirements of rivers in South Africa. 14th Ground Water Division of the Geological Society of South Africa Conf. and Exhibition, 'From Theory to Action', Sep 21-23, 2015, Muldersdrift, South Africa.
- R119 2015 Altchenko, Y. and **K.G. Villholth**: Mapping irrigation potential from renewable groundwater in Africa – A development perspective. ICID 2015: Innovate to Improve Irrigation Performance, Montpellier, France, Oct. 11-16, 2015.
- R118 2015 **K.G. Villholth**: Groundwater Irrigation for Smallholders in Sub-Saharan Africa – A Review. ICID 2015: Innovate to Improve Irrigation Performance, Montpellier, France, Oct. 11-16, 2015.
- R117 2015 **Villholth, K.G.**, A. Sood, N. Liyanage, T. Zhu, and Y. Wada: The role of depleting groundwater in global food production. ICID 2015: Innovate to Improve Irrigation Performance, Montpellier, France, Oct. 11-16, 2015.
- R116 2015 **Villholth, K.G.**, A. Sood, N. Liyanage, T. Zhu: The role of groundwater in global food security. Invited talk. Water Policy for Food Security - A Global Conference Delivering Solutions for Sustainable Water Systems. World Food Center, UC Davis, California, USA, Oct 05-06, 2015.
- R115 2015 Puri, S., R. Kalin, S. Burchi, M. Nanni, **K.G. Villholth**, K. Harawa, A. Aureli, G. Howard: The (transboundary) groundwater resources of Africa - the engine to stimulate human development & environmental sustainability Mock Parliamentary debate. 26th IUGG General Assembly, Prague, Czech Republic, Jun. 22 - Jul. 02, 2015.
- R114 2015 Ebrahim, G.Y. and **K.G. Villholth**: Estimating groundwater availability at the catchment scale using streamflow recession and instream flow requirements of rivers in South Africa. 26th IUGG General Assembly, Prague, Czech Republic, Jun. 22 - Jul. 02, 2015.
- R113 2015 Altchenko Y., **K.G. Villholth**: Transboundary aquifer mapping and management in Africa: An on-going process. 26th IUGG General Assembly, Prague, Czech Republic, Jun. 22 - Jul. 02, 2015.
- R112 2015 Altchenko Y., **K.G. Villholth**: Mapping irrigation potential from renewable groundwater in Africa - A quantitative hydrological approach. 26th IUGG General Assembly, Prague, Czech Republic, Jun. 22 - Jul. 02, 2015.

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- R105 2014 Cap-Net, BGR, IWMI, IGRAC: Integration of Groundwater Management into Transboundary Basin Organizations in Africa. Training Manual. Contributors: **Villholth, K.G.**, R. Owen, T.A. Abiye, et al.
- R104 2014 **Villholth, K.G.**: Managing Smallholder Groundwater-dependent Agrarian Socio-ecologies using an Ecosystem Service and Resilience Based Approach. WLE Workshop 'Managing Smallholder Groundwater-dependent Agrarian Socio-ecologies using an Ecosystem Service and Resilience Based Approach', Colombo, Sri Lanka. Nov. 04-07 Nov, 2014.
- R103 2014 **Villholth, K.G.**: Integrated Metrics and Tools to Support Sustainable Agricultural Groundwater Use. WLE Workshop 'Managing Smallholder Groundwater-dependent Agrarian Socio-ecologies using an Ecosystem Service and Resilience Based Approach', Colombo, Sri Lanka. Nov. 04-07 Nov, 2014.
- R102 2014 **Villholth, K.G.**, A. Sood, N. Liyanage, T. Zhu, and E.H. Sutanudjaja: Groundwater in global irrigated food production and the role of depleting aquifers. Global Futures and Strategic Foresight Team Meeting. IFPRI, Washington DC, USA. Nov. 4-5, 2014.
- R101 2014 **Villholth, K.G.**: Groundwater Irrigation in Sub-Saharan Africa: Trends, Potential and Constraints for Development. Invited talk. One day meeting 'Management of Groundwater Resources for Irrigation and Co-users' by the Irrigation Water Forum. ICE Westminster, London, UK, 07 Nov. 2014. <http://vimeo.com/icegroup/review/112068329/3993fb553b>.
- R100 2014 **Villholth, K.G.**: Estimation of groundwater contribution to downstream environmental requirements and allocatable groundwater in Usangu catchment, Tanzania. CLIVET Final Conference 'Climate | Water | Adaptation – Bringing Research into Practice', Dar es Salaam, Tanzania, Sep. 24, 2014.
- R99 2014 **Villholth, K.G.**: Groundwater in Africa and its Role as a Water Resource under Climate Variability and Change. CLIVET Final Conference 'Climate | Water | Adaptation – Bringing Research into Practice', Dar es Salaam, Tanzania, Sep. 24, 2014.

- R98 2014 **Villholth, K.G.:** Groundwater Irrigation in Africa: A Development & Poverty Perspective (Keynote). Flagship event to mark World Water Day 2014: Africa's 'Hidden Water' - Can it Secure Agricultural Growth and Food Security', ODI, London, UK. Mar. 21, 2014. <http://www.odi.org/events/3871-world-commissionwater-day-groundwater-food-security>.
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- R95 2014 **Villholth, K.G.** and Y. Altchenko: Transboundary Aquifer Mapping and Management in Africa. Leaflet. 8 pp. IWMI. [http://www.iwmi.cgiar.org/Publications/Other/PDF/transboundary\\_aquifer\\_mapping\\_and\\_management\\_in\\_africa.pdf](http://www.iwmi.cgiar.org/Publications/Other/PDF/transboundary_aquifer_mapping_and_management_in_africa.pdf).
- R94 2013 **Villholth, K.G.:** Groundwater integration into African Basin Organisations - A review of present initiatives. 27<sup>th</sup> ORASECOM Technical Task Team Meeting. Maseru, Lesotho, Nov. 21, 2013.
- R93 2013 **Villholth, K.G.:** Groundwater irrigation: A perspective on East Africa. International Symposium and Exhibition on Agricultural Development in the EAC Partner States, Serena Hotel, Kampala, Uganda, Nov. 06, 2013.
- R92 2013 **Villholth, K.G.:** Groundwater for smallholder food security and livelihoods - A synthesis of status and prospects in Sub-Saharan Africa. Stakeholder Workshop: Mozambique National Irrigation Dialogue. MINAG/ National Irrigation Institute (INIR), Maputo, Mozambique, Oct. 31, 2013.
- R91 2013 **Villholth, K.G.:** Transboundary Aquifer Assessment and Management in SADC. IWMI perspective. First Regional Workshop: Groundwater Resources Governance in Transboundary Aquifers - Stampriet Kalahari/Karoo Aquifer Case Study. UN House, Windhoek, Namibia, Oct. 22-24, 2013.
- R90 2013 **Villholth, K.G.:** Groundwater for Food Production. Module 5 for training manual on 'Groundwater Management for African Basin Organisations - Professional Training Courses'. IGRAC, BGR, African Network of Basin Organisations, Cap-Net, Aqua for All, IWMI, AGW-Net.
- R89 2013 **Villholth, K.G.:** Management of Transboundary Aquifers. Module 4 for training manual on 'Groundwater Management for African Basin Organisations - Professional Training Courses'. IGRAC, BGR, African Network of Basin Organisations, Cap-Net, Aqua for All, IWMI, AGW-Net.
- R88 2013 **Villholth, K.G.:** Challenges of groundwater management in Sri Lanka. National Seminar on Groundwater Governance in Sri Lanka. IWMI, Colombo, Sri Lanka, Aug. 15, 2013.
- R87 2013 **Shu, Y. and K.G. Villholth:** Estimation of groundwater contribution to downstream environmental requirements and allocatable groundwater in Usangu catchment, Tanzania. Water Resources Dialog - ChinAfrica Series No 1. Development and Management of Water Resources in China and Africa. Univ. of Western Cape, Cape Town South Africa. Jun. 26 - 28, 2013.
- R86 2013 Altchenko, Y. and **Villholth, K.G.:** Transboundary aquifer mapping and management in Africa: a harmonised approach. 1st African Water Symposium on Water Conflict, Bloemfontein, South Africa, June 19-21, 2013.
- R85 2013 **Villholth, K.G.:** Groundwater irrigation in Sub-Saharan Africa - a review of status and prospects for smallholder poverty alleviation and food security. Invited panellist for global conference: Water for Food - Too Hot, Too Wet, Too Dry: Building Resilient Agroecosystems, Lincoln, Nebraska, USA, May 5-8, 2013.
- R84 2013 Jørgensen, L.F. and **K.G. Villholth:** Groundwater governance in Denmark - experiences and recommendations. Groundwater Governance Regional Consultation, The Hague, The Netherlands, Mar. 19-22, 2013.

- R83 2013 **Villholth, K.G.:** Support to groundwater management of international basin organisations of Africa. Consultative meeting on: 'Groundwater Management in River Basin Organisations'. Ouagadougou, Burkina Faso, Feb.12 -14, 2013.
- R82 2013 **Villholth, K.G.** and V. Vaessen: Needs Assessment to Support Groundwater Management in International Basin Organisations of Africa. Final Report. Jan, 2013. BGR & Splash. 84 pp. <https://cgspace.cgiar.org/rest/bitstreams/a8d8bdf2-8db6-4316-8c48-c3531a86b0d3/retrieve>.
- R81 2012 Shu, Y. and **K.G. Villholth:** Analysis of flow and baseflow trends in the Usangu catchment, Tanzania. 16th SANCIAHS National Hydrology Symposium. Univ. of Pretoria, South Africa. Oct. 1-3. 2012.
- R80 2012 **Villholth, K.G.:** Support to Groundwater Management of Lake, River, and Aquifer Basin Organisations of Africa. 39th IAH Congress: Confronting Global Change. Niagara Falls, Canada, Sep.17, 2012.
- R79 2012 **Villholth, K.G.:** Groundwater Sustainability – what is it? (Keynote). 39th IAH Congress: Confronting Global Change. Niagara Falls, Canada, Sep.17, 2012.
- R78 2012 Christelis, G., C. Lohe, M. Quinger, B. Van Wyk, M. Quintino, and **K.G. Villholth:** Groundwater investigation of the Cuvelai-Etoshia Basin – Preliminary results and moving towards transboundary cooperation. Poster. International Waters Science Conference. Sep. 24-26, 2012 Bangkok, Thailand.
- R77 2012 **Villholth, K.G.:** Agricultural Groundwater Governance: Opportunities and Obstacles in SSA. Regional Consultation, Sub-Saharan Africa Region. GEF Project 'Groundwater Governance: A Global Framework for Country Action'. Kenya School of Monetary Studies, Nairobi, Kenya, May 29-31, 2012.
- R76 2011 Tindimugaya, C., Y. Altchenko, S. Bekele, H.A. Diallo, D. Mogbante, P. Pavelic, and **K.G. Villholth:** Groundwater resources and climate change in Africa. First Climate Change and Development in Africa (CCDA-I) Conference, Addis Ababa, Egypt. Oct. 17-19, 2011.
- R75 2011 Altchenko, Y, S.B. Awulachew, A.B. Brida, H.A. Diallo, D. Mogbante, P. Pavelic, C. Tindimugaya, and **K.G. Villholth:** Management of groundwater in Africa including transboundary aquifers: implications for meeting MDGs, livelihood goals and climate change adaptation. United Nations Economic Commission for Africa (UNECA). African Climate Policy Centre. Working Paper 6. 24 pp. <https://hal.science/hal-02329787/document>.
- R74 2011 **Villholth, K.G.,** P. Jeyakumar, P.H. Amerasinghe, A.S.P. Manamperi, M. Vithanage, R.R. Goswami, and C.R. Panabokke: Tsunami impacts and rehabilitation of groundwater supply: Lessons learned from Eastern Sri Lanka. In: Vrba, J. and B.Th. Verhagen (Eds.): *Groundwater for Emergency Situations - A Methodological Guide*. UNESCO. IHP-VII Series on Groundwater No. 3, pp. 296-308. <http://unesdoc.unesco.org/images/0019/001921/192182e.pdf>.
- R73 2011 SADC, 2011. Groundwater Drought Vulnerability Mapping. Southern African Development Community. Groundwater & Drought Management Project. 5 pp.
- R72 2011 Wodschow, K., P. Engesgaard, **K.G. Villholth,** and M. Vithanage: Threats against the groundwater - The east coast of Sri Lanka 6 years after the tsunami. (In Danish: Trusler mod grundvandet - Østkysten af Sri Lanka 6 år efter tsunamien). Geologisk Nyt, 3, 12-15.
- R71 2011 Pavelic, P., V. Smakhtin, G. Favreau, and **K.G. Villholth:** Water balance approach for assessing potential for small-scale groundwater irrigation in sub-Saharan Africa. GWD/GSSA and IAH Int. Conference on Groundwater: Our Source of Security in an Uncertain Future, Pretoria, South Africa, Sep. 19-21, 2011.
- R70 2011 Henriksen, H.J., **K.G. Villholth,** L.F. Jørgensen, and F.F. Kastoft: Groundwater management in Denmark - a farewell to the precautionary principle? ESF Conference, Water Governance: Meeting the Challenges of Global Change, Obergurgl, Austria, Jun. 5-10, 2011.
- R69 2011 **Villholth, K.G.,** C. Tøttrup, M. Stendel, A. Maherry, M. Claassen, C. Chikozho, and C. Colvin: SADC Regional groundwater drought vulnerability mapping. Final Report. Southern Africa Development Community. 127 pp. <https://www.geus.dk/media/23135/final-report-sadc-gwdvm-2011.pdf>.



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- R67 2011 Brüsche, W., **K.G. Villholth**, J. Flyvbjerg, C.B. Jensen, and K. Smith: Punktkilders påvirkning af grundvandskvaliteten i Danmark (The impacts of point source pollution on groundwater quality in Denmark). Presentation at ATV Meeting, Vingsted, Denmark, Mar. 08, 2011. Published in: Vintermøde om Jord og Grundvandsforurening. Bind II. Pp. 101-110. ISBN nr. 978 87 913 1353 0.
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- R61 2010 **Villholth, K.G.**: Groundwater and Climate Change - Technical and Managerial Challenges. Invited talk. Danish Water Forum - Japan Water Forum. Water and Climate workshop: Water Management in Cities under Climate Change. Stockholm, Sweden, Sep. 9, 2010.
- R60 2010 **Villholth, K.G.**: Too little, too much and too poor water in the world (In Danish: For lidt, for meget og for dårligt vand i verden). Invited talk. Rotary Club, Slagelse, Denmark, Aug. 10, 2010.
- R59 2010 **Villholth, K.G.**, B. Andersen, M. Drews, B.C. Kaae, V. Nellemann, L. van der Bijl, S. Binnerup, I.F. Strand, and L. Moseholm: Experiences and perspectives - DialoK-meetings with the research environment. Coordination Unit for Research in Climate Change Adaptation (In Danish: Erfaringer og perspektiver - DialoK-møder med forskningsmiljøerne. Koordineringsenhed for Forskning i Klimatilpasning), Aarhus University. 22 pp. ISBN 978-87-993234-1-8. [http://www.klima.au.dk/fileadmin/filer/KFT/dialok\\_2009.pdf](http://www.klima.au.dk/fileadmin/filer/KFT/dialok_2009.pdf).
- R58 2010 **Villholth, K.G.**: Adaptation - Land and water. Invited presentation to the Danish Climate Change Task Force Meeting: What are the key climate change challenges to address, seen in the perspective of the UN COP process and the new Danish Development Strategy? Eigtveds Pakhus, Copenhagen, Denmark, Mar. 23, 2010.
- R57 2009 Hinsby, K., T.O. Sonnenborg, H.J. Henriksen, and **K.G. Villholth**: Climate change: impact, adaptation and integrated groundwater management in the North Sea and Baltic Sea regions. IOP Conf. Series: Earth and Environmental Science 6 (2009) 292034 DOI:10.1088/1755-1307/6/9/292034.
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- R55 2009 **Villhoth, K.G.:** The neglected role of groundwater in climate change adaptation and disaster risk reduction. IOP Conf. Series: Earth and Environmental Science **6** (2009) 292062. DOI:10.1088/1755-1307/6/9/292062.
- R54 2009 **Villholth, K.G.:** Groundwater and climate change: challenges and possibilities in developing countries. Invited presentation to the EU side event arranged by the Danish Meteorological Institute: Adapt to Climate Change - Denmark and Developing Nations' at the UN Climate Change Conference (COP15), Copenhagen, Dec. 7-18, 2009.
- R53 2009 **Villholth, K.G.:** Climate change adaptation with groundwater: development issues with a focus on Asia. Invited presentation to the Holland Water House session 'Groundwater – Key to adaptation' at the UN Climate Change Conference (COP15), Copenhagen, Dec. 7-18, 2009.
- R52 2009 **Villholth, K.G.:** Danish Water Solutions to a Developing World under Environmental and Climate Stress. Paper prepared for the Danish EPA and with the Danish Water Forum in connection with the UN Climate Change Conference (COP15), Copenhagen, Dec. 7-18, 2009. 20 pp. [http://www.danishwaterforum.dk/Docs/Old%20Docs/Globalchallenges\\_web\\_171209.pdf](http://www.danishwaterforum.dk/Docs/Old%20Docs/Globalchallenges_web_171209.pdf).
- R51 2009 **Villholth, K.G.:** Role of groundwater in irrigated farming in South Asia and China - the constraints and options for water productivity gains. Invited presentation for the Regional R&D Workshop on: Water Saving Irrigation Practices in Rice-based Canal Systems. AIT, Bangkok, Thailand, Oct. 8-9, 2009.
- R50 2009 Andersen, B., S. Binnerup, L. van der Bijl, **K.G. Villholth**, M. Drews, I.F. Strand, T. Henrichs, N. Larsen, T. Timmermann, and L. Moseholm: Climate Adaptation - 5 Central Research Themes. Adaptation to climate change research coordination unit (In Danish: Klimatilpasning – 5 centrale forskningstemaer. Koordineringsenhed for Forskning i Klimatilpasning). 32 pp. [http://klima.au.dk/fileadmin/filer/KFT/klimatilpasning\\_web.pdf](http://klima.au.dk/fileadmin/filer/KFT/klimatilpasning_web.pdf).
- R49 2009 Binnerup, S.J., M. Drews, **K.G. Villholth**, T. Henrichs, L. van der Bijl, N. Larsen, L. Koefoed, B. Andersen, T. Timmermann, and L. Moseholm: Mapping of climate research in Denmark - Annexes. Research and evaluation 2/2009. (In Danish: Kortlægning af Klimaforskning i Danmark - Bilag). Prepared in collaboration with the Ministry of Science, Technology and Innovation, the Coordination Unit for Research in Climate Change Adaptation, and the Ministry of Climate and Energy. 109 pp. Internet ISBN: 978-87-923-7264-2. <http://vtu.dk/publikationer/2009/bilag-kortlaegning-af-klimaforskning-i-danmark/>.
- R48 2009 **Villholth, K.G.:** Groundwater as a Strategic Resource of Today and Tomorrow in SADC - An integrated and international view (Keynote). 3<sup>rd</sup> SADC Multi-stakeholder Water Dialogue: Watering Development in SADC: Surfacing of the Hidden Resource – Groundwater, Johannesburg, South Africa, May 27-28, 2009.
- R47 2009 **Villholth, K.G.:** Water and ethics in food production and provision - How to ensure water and food security and equity into the 2100 century? 5th World Water Forum: Side event: Presentation of the book: 'Water and Ethics'. Istanbul, Turkey, Mar. 20, 2009.
- R46 2009 Vithanage, M., K. Mahatantila, **K.G. Villholth**, P. Engesgaard, and K.H. Jensen: Significance of well cleaning and pumping on ground water quality of a tsunami affected coastal aquifer in eastern Sri Lanka. Proceedings of the 25th Annual Sessions of Geological Society of Sri Lanka, February.
- R45 2008 Hetzel, F., V. Vaessen, T. Himmelsbach, W. Struckmeier, and **K.G. Villholth**: Groundwater and Climate Change: Challenges and Possibilities. BGR and GEUS. 15 pp. [https://www.bgr.bund.de/EN/Themen/Wasser/Produkte/Downloads/groundwater\\_climate\\_change\\_pdf.pdf?\\_\\_blob=publicationFile&v=3](https://www.bgr.bund.de/EN/Themen/Wasser/Produkte/Downloads/groundwater_climate_change_pdf.pdf?__blob=publicationFile&v=3).
- R44 2008 **Villholth, K.G.:** El Manejo Sostenible de las Aguas Subterráneas – Una Visión Compartida (Keynote). ExpoAgua, Guanajuato, Mexico, Sep. 24-26, 2008.
- R43 2008 **Villholth, K.G.** and L. Lytton: A conceptual framework for how to ensure the sustainable use, management, and protection of groundwater resources for water supply during disasters. Paper invited for the XXXVI IAH Congress, Toyama, Japan, Oct. 26 to Nov. 1, 2008. (Nominated best article and lecture in session).

- R42 2008 **Villholth, K.G.:** Groundwater in big cities, use consequences, impact of climate change and response options' Invited talk for FAU Conference: Cities, Climate Change and Development: Is Urban Change for Sustainability Possible? Copenhagen Business School, Copenhagen, Denmark, May 14-15, 2008. (FAU is the Danish acronym for the Association of Development Researchers in Denmark). [http://www.fau.dk/2008\\_konferencerapport\\_final2%5B1%5D.pdf](http://www.fau.dk/2008_konferencerapport_final2%5B1%5D.pdf).
- R41 2008 **Villholth, K.G.:** Impacts of the Indian Ocean Tsunami on Groundwater Salinity and Local Water Supply in Sri Lanka – Lessons Learned from Integrated Research and Support to Rehabilitation' (Keynote). 2<sup>nd</sup> Int. Salinity Forum, Adelaide, Australia, Mar. 31 - Apr. 3, 2008.
- R40 2008 Illangasekare, T.H., M. Vithanage, K. H. Jensen, J. Obeysekera, P. Engesgaard, **K.G. Villholth:** Validation of a new conceptual model for salinity persistence in tsunami-affected coastal aquifers - intermediate scale experimental study. AGU Joint Assembly, Fort Lauderdale, Florida, May 27-30, 2008.
- R39 2008 **Villholth, K.G.,** M. Vithanage, R.R. Goswami, P. Jeyakumar, and A.S.P. Manamperi: Salinity Impacts of the Indian Ocean Tsunami on Groundwater and Local Water Supply – Lessons Learned from Integrated Research and Support to Rehabilitation. Invited talk. AGU Joint Assembly, Fort Lauderdale, Florida, May 27-30, 2008.
- R38 2008 Van Gilse, N.C.O., **K.G. Villholth,** and S. Manamperi: Natural hydro-geological support and limitations, based on geo-electrical measurements, to utilization of fresh groundwater resources in the Kalpitiya Peninsula, Sri Lanka. IWMI report.
- R37 2008 Vithanage, M., **K.G. Villholth,** P. Engesgaard, and K.H. Jensen: Sustainability of coastal aquifer systems in the east coast of Sri Lanka – Estimation of safe yield under saltwater stress from population increase and climate change. Report to PFRA, Agriculture and Agri-food Canada.
- R36 2007 T. H. Illangasekare, M. Vithanage, K. H. Jensen, P. Engesgaard, J. Obeysekera, **K. G. Villholth,** L. Perera: Role of aquifer heterogeneity in salinity persistence in tsunami affected coastal aquifers - need for better characterization. AGU Annual Meeting 2007. Eos Trans. AGU, 88(23), Jt. Assem. Suppl., Abstract B43B-01.  
<https://ui.adsabs.harvard.edu/abs/2007AGUSM.B43B..01I/abstract>.
- R35 2007 Vithanage, M., **K.G. Villholth,** K. Mahatantila, P. Engesgaard, and K.H. Jensen: Effect of tsunami on shallow ground water quality in Sri Lanka; field observations and geochemical modeling. AGU Annual Meeting 2007. Eos Trans. AGU, 88(52). Suppl., Abstracts H51K-07).
- R34 2007 Goswami, R.R., **K.G. Villholth,** M. Vithanage, T.P. Clement, T. Sakaki, T. Illangasekare and K.H. Jensen: Variable Density Transport during Well Rehabilitation after a Tsunami-induced Saltwater Contamination Event. ModelCARE, Copenhagen, Denmark, September 10-13, 2007.
- R33 2006 Hogan, M.B., R.R. Goswami, **K.G. Villholth,** T.H. Illangasekare, and T.P. Clement: Understanding the flow and mixing dynamics of saline water discharged into coastal freshwater aquifers. Selected peer-reviewed paper presented at the SWIM-SWICA meeting. Cagliari, Chia Laguna, Sardinia, Italy. Sep. 24-29, 2006.
- R32 2006 **Villholth, K.G.:** Salinity Impacts of the Tsunami on Shallow Groundwater and Associated Water Supply on the East Coast of Sri Lanka. Invited talk. Groundwater in Emergencies. IAH, RedR-IHE, Hydrogeological Group of the Geological Society. Burlington House, Piccadilly, London, May 8, 2006.
- R31 2006 **Villholth, K.G.** and B.R. Sharma: Creating Synergy between Groundwater Research and Management in South and South East Asia. In: Sharma, B.R. **K.G. Villholth,** and K.D. Sharma (Eds.). *Groundwater Research and Management: Integrating Science into Management Decisions*. Proceedings of IWMI-ITP-NIH International Workshop on: "Creating Synergy between Groundwater Research and Management in South and Southeast Asia", Feb. 8-9, 2005, Roorkee, India. Groundwater Governance in Asia Series. International Water Management Institute, South Asia Regional Office, New Delhi, India, p. 1-13.

- R30 2006 **Villholth, K.G.**: Integrating science into groundwater management decisions. In: Sharma, B.R. **K.G. Villholth**, and K.D. Sharma (Eds.). *Groundwater Research and Management: Integrating Science into Management Decisions*. Proceedings of IWMI-ITP-NIH International Workshop on: "Creating Synergy between Groundwater Research and Management in South and Southeast Asia", Feb. 8-9, 2005, Roorkee, India. Groundwater Governance in Asia Series. International Water Management Institute, South Asia Regional Office, New Delhi, India, p. 258-270.
- R29 2006 **Villholth, K.G.**: The trace of the tsunami in groundwater - experiences from investigations in Sri Lanka (In Danish: Tsunamiens spor i grundvandet - erfaringer fra undersøgelser i Sri Lanka). *Geologisk Nyt*. Aug. 2006, 4-8.
- R28 2006 **Villholth, K.G.**, P. Amerasinghe, and P. Jeyakumar: Tsunami impacts on shallow groundwater and associated water supplies on the east coast of Sri Lanka. Proceedings of the International Groundwater Conference, New Delhi, India, Feb. 1-4, 2006.
- R27 2006 Jousma, G., F. Roelofsen, S. Vasak, R. Boak, R. Chatterjee, **K.G. Villholth**, K. Riemann, and C. Tindimugaya: Guideline on exploitable groundwater resources - Concept and methodology for estimation. IGRAC, Utrecht, The Netherlands. Report nr. GP 2005-2 (Not published).
- R26 2005 **Villholth, K.G.**, P.H. Amerasinghe, P. Jeyakumar, C.R. Panabokke, O. Woolley, M.D. Weerasinghe, N. Amalraj, S. Prathepaan, N. Bürgi, D.M.D.S. Lionelrathne, N. G. Indrajith, and S.R.K. Pathirana: Tsunami Impacts on Shallow Groundwater and Associated Water Supply on the East Coast of Sri Lanka. Colombo, Sri Lanka. International Water Management Institute (IWMI). ISBN 92-9090-622-7. 68 pp.  
[https://ageconsearch.umn.edu/bitstream/118303/2/Tsunami\\_Impacts\\_on\\_Shallow\\_Groundwater.pdf](https://ageconsearch.umn.edu/bitstream/118303/2/Tsunami_Impacts_on_Shallow_Groundwater.pdf).
- R25 2005 UNICEF: Consequences of the Tsunami on the Coastal Aquifer in Eastern Sri Lanka – Guidelines on Wells Rehabilitation. Trincomalee, May, 2005.
- R24 2005 **Villholth, K.G.**: Comprehensive Assessment of Consequences and Options for Agricultural Groundwater Use. Proceedings of the Workshop: Groundwater Governance and Management - An IWRM Perspective in Arid/Semi-Arid Climates", Cairo, Egypt, Apr. 4-7, 2005. ASAGW-Cairo2005/T2-6.  
[http://www.iwmi.cgiar.org/assessment/Synthesis/Groundwater\\_contributed\\_documents.htm](http://www.iwmi.cgiar.org/assessment/Synthesis/Groundwater_contributed_documents.htm)
- R23 2004 Nielsen, K., H.E. Andersen, S.E. Larsen, B. Kronvang, M. Stjernholm, M. Styczen, R.N. Poulsen, **K.G. Villholth**, J. Krogsgaard, K.I. Dahl-Madsen, A. Friis-Christensen, T. Uhrenhodt, I.S. Hansen, S.E. Pedersen, O. Jørgensen J. Windolf, M.H. Jensen, J.C. Refsgaard, J. Rølmer Hansen, V. Erntsen, C. D. Børgesen, and L. Wiggers: Odense Fjord – Scenarios for Reduction of Nutrients. Danmarks Miljøundersøgelser (National Environmental Research Institute, Denmark). 276 pp. Report from DMU nr. 485. <http://faglige-rapporter.dmu.dk>. In Danish.
- R22 2003 Holm, J. and **K.G. Villholth**, C. Petersen and C.B. Koch: Facilitated Transport of Pesticides. Ministry of the Environment. National Agency of Environmental Protection, Denmark. Pesticides Research No. 67.
- R21 2000 Mortensen, A.P., K.H. Jensen, **K.G. Villholth**, B. Nilsson, P. Gravesen: Multiple tracers for characterizing flow and transport in unsaturated fractured clayey till. In: Bjerg, P.L., P. Engesgaard, T.D. Krom (Eds.): *Groundwater 2000. Proceedings of the International Conference on Groundwater Research*. Copenhagen, Denmark, June 06-08, 2000, CRC Press, London, ISBN9781003078593.
- R20 2000 Jacobsen, O.H., **K.G. Villholth**, M. Ullum, and P. Møldrup: Pesticides bound to soil particles can leach. Pesticides – Consequences for the Environment. The World of Nature (Naturens Verden). Feb. 2000, 19-21. In Danish.
- R19 2000 Holm, P.E., K. Broholm, O. Hjelm, **K.G. Villholth**, O.W. Asmussen, and P. Kjeldsen: Development of Method for Testing of Leaching of Organic Compounds from Soil and Waste Products. Ministry of the Environment. National Agency of Environmental Protection, Denmark. Environmental Project, N0. 579. In Danish.

- R18 1999 Hoffmann, M., Kistrup, J., Bryde, C., Jørgensen, P.R., Jørgensen, N.O., Bossi, R. and **K.G. Villholth**: Vertical transport of solutes through saturated fractured till – Mathematical modeling of field experiment. Geological Society of America, Annual Meeting, Denver, Colorado. Oct. 25-28, 1999
- R17 1999 Hoffmann, M., Kistrup, J., Bryde, C., Jørgensen, P.R., Jørgensen, N.O., Bossi, R. and **K.G. Villholth**: In situ transport experiment in saturated fractured till. In: N.O. Jørgensen et al. (Eds): Abstract Volume. Conference on Mass Transport in Fractured Aquifers and Aquitards. May 14-16, 1998. Geological Institute, University of Copenhagen, 85.
- R16 1998 Hoffmann, M., J. Kistrup, C. Bryde, P.R. Jørgensen, N.O. Jørgensen, R. Bossi, and **K.G. Villholth**: Pesticide transport in moraine clay - field investigation of deep fractures (In Danish: Pesticidtransport i morænejord - feltundersøgelser af dybe sprækker). *Geologisk Nyt*, 2, 17-19.
- R15 1998 Holm, P.E, **Villholth, K.G.**, and O.W. Asmussen: Investigation of the Chemical Speciation of Arsenic in Contaminated Groundwater. Orientering, Oktober, 1998. Fredensborg County and the Information Centre on Contaminated Sites. In Danish.
- R14 1997 **Villholth, K.G.**: Do creosote compounds in groundwater have unexpected transport mechanisms? *Miljøforskning*, 33, 37-40. In Danish.
- R13 1997 Jarvis, N. and **K.G. Villholth**: Modelling colloid-facilitated pesticide transport in macroporous soils. NJF Seminar: Preferential Flow in Soil and its Importance for Water Flow Distribution and Transport of Nutrients and Pesticides. The Royal Veterinary and Agricultural University, Copenhagen, Denmark, Nov. 24-26.
- R12 1997 **Villholth, K.G.**, A. Brun, F. Christensen and O. Hjelm: Colloid-facilitated transport of pesticides and other sorbing contaminants in soil and groundwater. Ministry of the Environment. National Agency of Environmental Protection, Denmark.
- R11 1995 **Villholth, K.G.**: Transport of PAH via colloids in groundwater - Danish and international case-studies. Research projects concerning groundwater contamination, ATV-Committee on Soil and Groundwater.
- R10 1995 **Villholth, K.G.** M. Styczen, and M. Thorsen: Modelling leaching of pesticides. ATV-Committee on Soil and Groundwater. Winter Meeting, 1995.
- R9 1995 **Villholth, K.G.** and M. Styczen: Pesticides in Groundwater - Risk Assessment. *Vand & Jord*, Årg. 2, Nr. 1, p. 8-11. In Danish.
- R8 1995 Styczen, M. and **K.G. Villholth**: Pesticide Modelling and Models. *Bekæmpelsesmiddel-forskning fra Miljøstyrelsen*, Nr. 9. National Agency of Environmental Protection, Denmark, 149 pp.
- R7 1993 **Villholth, K.G.** and K.H. Jensen: Experimental and numerical investigations of macropore flow and transport. Proceedings, Ground Water Modelling Conference, Golden, Colorado, June 9-12, 1993. International Ground Water Modelling Center.
- R6 1991 **Villholth, K.G.**: Hydrological Computerized Modelling System (SHE). Vol V: Guidelines for Field Investigations for Hydrological Modelling Using SHE. Danish Hydraulic Institute. Prepared in collaboration with the National Institute of Hydrology, Roorkee, India.
- R5 1991 **Villholth, K.G.**, K.H. Jensen, and J. Fredericia: Field investigations of preferential flow behaviour. In: Kienitz, G. et al. (Eds): *Hydrological Interactions between Atmosphere, Soil and Vegetation*. Proceedings of IUGG. IAHS Publication No. 204. Vienna, August 1991.
- R4 1990 **Villholth, K.G.**, K.H. Jensen, and J. Fredericia: Field investigations of preferential flow behaviour. NPO-project B19. National Agency of Environmental Protection, Denmark. 1991
- R3 1990 **Villholth, K.G.**, K.H. Jensen, and J. Fredericia: Field tracer experiment on preferential flow. Meeting held Oct. 24, 1990. ATV-Committee concerning groundwater pollution and the Groundwater Centre, Technical University of Denmark.
- R2 1988 **Villholth, K.G.**: Water balance simulation of a Norway spruce plantation. Report to an EEC-project on the effects of acid deposition on forest ecosystems. Laboratory of Environmental Science and Ecology, Technical University of Denmark.



- R1      1988      **Villholth, K.G.** and K.H. Jensen: Conceptual modelling of nitrogen leaching from cultivated areas. Proceedings, Nordic Hydrological Conference, Rovaniemi, Finland, Aug. 1-3, 1988.