NICOLAAS CORNELIS VAN DE GIESEN

Delft University of Technology
Faculty of Civil Engineering and Geosciences
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EDUCATION

Cornell University, Ithaca, NY
Ph.D., January 1994
Major: Soil and Water Engineering
Minors: Anthropology, Remote Sensing

Agricultural University of Wageningen, Netherlands
M.Sc., September 1987
Major: Land and Water Management
Minors: Agrarian Law of Non-Western Societies, Hydrology

Agricultural University of Wageningen, Netherlands
B.S., January 1985: Land and Water Management

RESEARCH EXPERIENCE

Delft University of Technology, 7/2004 until present
Professor at the Faculty of Civil Engineering holding the Van Kuffeler chair of Water Resources Engineering. Leading group of post-graduate scientists, who conduct research on integrated and operational water management. Responsible for development of teaching curriculum at undergraduate and graduate level. See www.wrm.tudelft.nl. Since January 2015, Chairman of the Delft Global Initiative. Co-founder of two spin-off companies and the Trans-African Hydro-Meteorological Observatory (TAHMO, see www.tahmo.org). Leads the National Research Agenda activities aimed at the Sustainable Development goals.

Center for Development Research (ZEF) – Bonn University, 8/98 until 7/2004
Senior Scientist responsible for hydrological activities within multidisciplinary research projects in developing countries. Emphasis on impact of landuse change on water cycle, hydrological use of remote sensing, and integration of hydrology in policy making. Since May 2000, coordinator of GLOWA Volta project concerned with the development of a decision support system for the water resources of the Volta Basin in West Africa. The GLOWA Volta project quantitatively integrates modeling results from meteorology, hydrology, soil science, agronomy, economy, and legal studies (see ***Nature*** 424, p359).

Cornell University, 1/98 until 8/98
Research Associate involved in watershed management research and teaching. Responsible for development of user friendly non-point source pollution movement simulation module within integrated watershed management software package. Co-teaching graduate level watershed management course.

RESEARCH EXPERIENCE (Continued)

West Africa Rice Development Association, 12/94 until 12/97
Hydrologist responsible for the hydrological characterization and modeling of the West African upland/lowland continuum landscape. Work included field research, fund acquisition, student supervision, and scientific network building. Activities covered establishment of experimental watersheds, measuring and modeling impact of lowland rice cultivation, and leading a regional program for application of radar satellite imagery in water resource management.

Cornell University, 10/93 to 10/94
Research Associate charged with development and evaluation of watershed management policies. Teaching watershed management course. Responsible for the organization of the Integrated Watershed Analysis and Management course with participants from Indonesia, Philippines, Honduras, Zimbabwe, Ghana, and Dominican Republic.

U.S. Agency for International Development, D.A.I., 6/92 to 9/92
Consultant charged with design and implementation of a hydrological model for watersheds in Rwanda, Africa.

C.I.I.F.A.D., 6/91 to 9/92
Ph.D. research in Rwanda, Africa. Hydrological and socio-legal research on the development of upland watersheds in relation to their physical and social environment.

Cornell University, Assistantships, 8/89 to 5/91 and 10/92 to 9/93
1. Departmental Teaching Assistantship for graduate drainage course.
2. Design of groundwater and pesticide monitoring system for Northern New York Agricultural Development Program.
3. Analysis of legal aspects and environmental risks of underground storage tanks in Tompkins County.
4. Analysis of irrigation and drainage research in the U.S.A.

Netherlands Foundation for Scientific Research, 7/88 to 11/88
Fellowship in Bali, Indonesia. Field research on cooperation among farmer irrigation groups (subaks) at river basin level.

Agricultural University of Wageningen, 4/88, 11/87, and 10/86 to 3/87
Research fellowships Department of Tropical Land and Water Management. Wrote discussion paper on relation between irrigation and law (4/88) and two papers for the International Workshop on Mangrove Rice, Bissau 1987 (11/87). M.Sc. research on conflict management in a rural development project in Bissassema, Guiné-Bissau (10/86 to 11/87).

National Irrigation Administration Philippines, 11/84 to 5/85
Apprenticeship: Implementation of new water allocation model in Upper Pampanga River Integrated Irrigation System, Central Luzon.

TEACHING EXPERIENCE

- Introduction Water Resources, 2005-2017
- Integrated Water Resources Management, 2004-present
- Integrated Modeling, 1999, 2000, 2001, 2002, 2003
- Integrated Watershed Analysis, Assessment and Management, 1994
- Watershed Management Graduate Course, 1994, 1998

Doctorate Student Supervision (concluded in italics)

Ali Abbasi (2016), Sehouevi David Agoungbome (2023), *Ayo Ajayi (2004)*, *Barnabas Amisigo (2006),* Frank Annor (2020), Boran Ekin Aydin (2020)*, Rafik Al-Sakkaf (2005), Fafré Bagayoko (2006)*, *Floris Bogaard (2015)*, *Dirk Burose (2005)*, *Luca Carniato (2014)*, *Marie Charrière (2018)*, *Halidou Compaoré (2005)*, *Juliette Cortes Arevalo (2016)*, *Jeffrey Davids (2019)*, *Rutger de Graaf (Cum Laude 2009)*, *Gena Donchyts (2018)*, *Congli Dong (2014)*, *Jianzhi Dong (Cum Laude 2016)*, Sobhan Emtehani (2020), Mónica Estebanez Camarena (2023), *Jan Friesen (2008)*, *Santiago Gaitan (2017)*, *Mohsin Hafeez (2002)*, *Koen Hilgersom (2017)*, *Rolf Hut (2013)*, *Hayot Ibrakhimov (2004)*, *Sandra Junier (2017)*, Nyein Thandar Ko (2020), Andreas Krietemeyer (2020), Camille le Coz (2020), *Jens Liebe (2007)*, Xinyu Liu (2020), *Yang Lu (2019)*, *Mutsa Masiyandima (2000)*, *Hojjat Mianabadi (2015)*, *Xu Min (2011), Khin Myo Aye (2006),* Nay Myo Lin (2020), *Kofi Nyarko (2007), Philip Oguntunde (2003), Martine Poolman (2009)*, Reza Pramana (2020), *Tom Raadgever (2009), Luciano Raso (2013)*, *Sergio Salinas Rodrigues (2019)*, *Martine Rutten (2015)*, *Jean-Pierre Sandwidi (2007)*, Alban Singirankabo(2021), *Anna Solcerova (2018)*, *Muhammad Atiq-ur-Rehman Tariq (2011)*, *Xin Tian (2015)*, *Tim van Emmerik (2017)*, Zhenwu Wang (2020), *Steven Weijs (2009)*, *Yingrong Wen (2017)*, *Bart Wickel (2003)*, Tianduowa Zhu (2021)

HONORS AND ACTIVITIES

National Science Agenda representative Route 23: SDGs, 2018 - present
Member High-Level Expert Team on Water Netherlands-Myanmar (2012-2017)
Winner of Regional and University Competition, *European Satellite Navigation Challenge*, 2015
Darcy Medal, *European Geosciences Union*, 2015
Chairman *Delft Global Initiative*, 2015 - present
Leermeesterprijs ('Best-Professor-Award') *TU Delft* 2014
Co-founder *Trans-African Hydro-Meteorological Observatory (TAHMO)* Foundation
Co-founder spin-off companies *Selkermetrics Europe* and *Disdrometrics*
Specialty Chief Editor, *Frontiers in Geoscience Hydrosphere*, 2013 - present
Scientific Advisory Board *KWR Watercycle Research Institute*, 2012 - present
Advisory Board Member of *Aalto University School of Engineering*, 2011 - present
Science Representative National "*Topteam Water*", Ministry Infrastructure & Environment, 2011
IBM Faculty Award 2010
Director *Delft Research Initiative Environment*, 2008 - 2015
Editor, *Hydrology and Earth System Sciences*, 2007-2011
Joint Editor, *Irrigation and Drainage*, 2008 - 2013
Associate Editor, *Water Resources Research*, 2007 - 2013
Wissenschaftlicher Beirat, *Institut für sozial-ökologische Forschung*, Frankfurt, 2005 - 2018
Chairman *Water Policy & Management*, European Geosciences Union, 2005-2011
Secretary *International Commission Water Resources Systems*, IAHS, 2007 - 2015
Chairman *Netherlands Commission on Irrigation and Drainage*, 2006 - 2013
Senior Fellow *Center for Development Research*, Universität Bonn, 2004 - 2014
Phi Kappa Phi Honor Society
Gamma Sigma Delta Agricultural Honor Society
Social Service Award, Secretary International Student Board (90-91), Cornell University

PUBLICATIONS

International peer reviewed

"Integrative technology hubs for urban food-energy water nexuses and cost-benefit-risk tradeoffs (II): Design strategies for urban sustainability." Ni-Bin Chang, Uzzal Hossain, Andrea Valencia, Jiangxiao Qiu, Qipeng P. Zheng, Lixing Gu, Mengnan Chen, Jia-Wei Lu, Ana Pires, Chelsea Kaandorp, Edo Abraham, Marie-Claire ten Veldhuis, Nick van de Giesen, Bruno Molle, Severine Tomas, Nassim Ait-Mouheb, Deborah Dotta, Rémi Declercq, Martin Perrin, Leon Conrad, Geoffrey Molle, *Critical Reviews in Environmental Science and Technology*, doi:10.1080/10643389.2020.1761088, 2020

"Integrative technology hubs for urban food-energy water nexuses and cost-benefit-risk tradeoffs (I): Global trend and technology metrics." Ni-Bin Chang, Uzzal Hossain, Andrea Valencia, Jiangxiao Qiu, Qipeng P. Zheng, Lixing Gu, Mengnan Chen, Jia-Wei Lu, Ana Pires, Chelsea Kaandorp, Edo Abraham, Marie-Claire ten Veldhuis, Nick van de Giesen, Bruno Molle, Severine Tomas, Nassim Ait-Mouheb, Deborah Dotta, Rémi Declercq, Martin Perrin, Leon Conrad, Geoffrey Molle, *Critical Reviews in Environmental Science and Technology*, doi:10.1080/10643389.2020.1759328, 2020

"A methodology for multi-objective evaluation of precipitation products for extreme weather (in a data scarce environment)." Sha Lu, Marie-claire ten Veldhuis, Nick van de Giesen, *Journal of Hydrometeorology*, 10.1175/JHM-D-19-0157.1, 2020

"High Quality Zenith Tropospheric Delay Estimation Using a Low-Cost Dual-Frequency Receiver and Relative Antenna Calibration." Andreas Krietemeyer, Hans van der Marel, Nick van de Giesen, Marie-Claire ten Veldhuis, *Remote Sensing,* 12(9), doi:10.3390/rs12091393, 2020

"Advancing ecohydrology in the 21st century: A convergence of opportunities" Andrew J. Guswa, Doerthe Tetzlaff, John S. Selker, Darryl E. Carlyle-Moses, Elizabeth W. Boyer, Michael Bruen, Carles Cayuela, Irena F. Creed, Nick van de Giesen, Domenico Grasso, David M. Hannah, Janice E. Hudson, Sean A. Hudson, Shin'ichi Iida, Robert B. Jackson, Gabriel G. Katul, Tomo'omi Kumagai, Pilar Llorens, Flavio Lopes Ribeiro, Beate Michalzik, Kazuki Nanko, Christopher Oster, Diane E. Pataki, Catherine A. Peters, Andrea Rinaldo, Daniel Sanchez Carretero, Branimir Trifunovic, Maciej Zalewski, Marja Haagsma, Delphis F. Levia, *Ecohydrology,* 13(4):e2208, doi:10.1002/eco.2208, 2020

"Performance of ERA5 data in retrieving Precipitable Water Vapour over East African tropical region." Richard Cliffe Ssenyunzi, Bosco Oruru, Florence Mutonyi D'ujanga, Eugenio Realini, Stefano Barindelli, Giulio Tagliaferro, Axel von Engeln, Nick van de Giesen, *Advances in Space Research,* doi:10.1016/j.asr.2020.02.003, 2020

"Lessons in New Measurement Technologies: From Instrumenting Trees to the Trans-African Hydrometeorological Observatory." J. S. Selker, F. Selker, R. Llamas, A. Kruger, J. Niemeier, M.R. Abou Najm, N. van de Giesen, R. Hut, T. van Emmerik, J.W. Lane, D.E. Rupp, H. Lintz, R.D. Stewart, K. McCulloh. In: Levia D., Carlyle-Moses D., Iida S., Michalzik B., Nanko K., Tischer A. (eds) *Forest-Water Interactions. Ecological Studies (Analysis and Synthesis)*, 240:131-144, doi:10.1007/978-3-030-26086-6, 2020

"An Engineering Perspective of Water Sharing Issues in Pakistan." Muhammad Atiq Ur Rehman Tariq, Nick van de Giesen, Shahmir Janjua, Muhammad Laiq Ur Rahman Shahid, Rashid Farooq, *Water,* 12:477, doi:10.3390/w12020477, 2020

"Urban river water level increase through plastic waste accumulation." Dorien Honingh, Tim van Emmerik, Wim Uijttewaal, Hadi Kardhana, Olivier Hoes, Nick van de Giesen, *Frontiers in Earth Science*, 8:28, doi:10.3389/feart.2020.00028, 2020

"The changing shapes of river deltas." Nick van de Giesen, *Nature*, 577(7791):473-474, doi:10.1038/d41586-020-00047-y, 2020

"Precipitation Regime Classification Based on Cloud-Top Temperature Time Series for Spatially-Varied Parameterization of Precipitation Models." Sha Lu, Marie-claire ten Veldhuis, Nick van de Giesen, Arnold Heemink, Martin Verlaan, *Remote Sensing*, 12(2), 289, doi:https://doi.org/10.3390/rs12020289, 2020

"Comparison of rainfall products over sub-Sahara Africa." Camille Le Coz, Nick van de Giesen, *Journal of Hydrometeorology*, doi:10.1175/JHM-D-18-0256.1, 2019

"Correcting Position Error in Precipitation Data Using Image Morphing." Camille Le Coz, Arnold Heemink, Martin Verlaan, Marie-claire ten Veldhuis, Nick van de Giesen, *Remote Sensing*, 11(21):2557, doi:10.3390/rs11212557, 2019

"A Low-Cost Water Quality Monitoring System for the Ayeyarwady River in Myanmar Using a Participatory Approach." Thanda Thatoe Nwe Win, Thom Bogaard, Nick van de Giesen, *Water*, 11:1984, doi:10.3390/w11101984, 2019

"Critical rainfall thresholds for urban pluvial flooding inferred from citizen observations." Xin Tian, Marie-claire ten Veldhuis, Marc Schleiss, Christian Bouwens, Nick van de Giesen, *Science of the Total Environment*, 689:258–268, doi:10.1016/j.scitotenv.2019.06.355, 2019

"Variability and accuracy of Zenith Total Delay over the East African tropical region." Richard Cliffe Ssenyunzi, Bosco Oruru, Florence Mutonyi D'ujanga, Eugenio Realini, Stefano Barindelli, Giulio Tagliaferro, Nick van de Giesen, *Advances in Space Research*, 64(4):900-920, doi:10.1016/j.asr.2019.05.027, 2019

"Nighttime Cooling of an Urban Pond." Anna Solcerova, Frans van de Ven Frans, Nick van de Giesen, *Frontiers in Earth Science*, 7:156, doi:10.3389/feart.2019.00156, 2019

"A Greedy Algorithm for Optimal Sensor Placement to Estimate Salinity in Polder Networks." Boran Ekin Aydin, Hugo Hagedooren, Martine M. Rutten, Joost Delsman, Gualbert H. P. Oude Essink, Nick van de Giesen, Edo Abraham, *Water*, doi:10.3390/w11051101, 2019

"The effects of plastics in riverine waste on accumulation at a debris rack." D.F. Honingh, H. Kardhana, W.S.J. Uijttewaal, O.A.C. Hoes, N.C. van de Giesen, *E-proceedings of the 38th IAHR World Congress*, Panama City, 2019

"The influence of rainfall and catchment critical scales on urban hydrological response sensitivity." Elena Cristiano, Marie-claire ten Veldhuis, Daniel B. Wright, James A. Smith, Nick van de Giesen, *Water Resources Research*, doi:10.1029/2018WR024143, 2019

"Soda Bottle Science—Citizen Science Monsoon Precipitation Monitoring in Nepal." Jeffrey C. Davids, Nischal Devkota, Anusha Pandey, Rajaram Prajapati, Brandon A. Ertis, Martine M. Rutten, Steve W. Lyon, Thom A. Bogaard, Nick van de Giesen, *Frontiers in Earth Science*, 7:46, doi:10.3389/feart.2019.00046, 2019

"Citizen science flow – an assessment of simple streamflow measurement methods." Jeffrey C. Davids, Martine M. Rutten, Anusha Pandey, Nischal Devkota, Wessel David van Oyen, Rajaram Prajapati, Nick van de Giesen, *Hydrology and Earth System Science,* 23:1045-1065, doi:10.5194/hess-23-1045-2019, 2019

"Tree Sway Time Series of 7 Amazon Tree Species (July 2015–May 2016)." Tim van Emmerik, Susan Steele-Dunne, Marceau Guerin, Pierre Gentine, Rafael Oliveira, Rolf Hut, John Selker, Jim Wagner, Nick van de Giesen, *Frontiers in Earth Science*, 6:221, doi:10.3389/feart.2018.00221, 2018

"Ideas and perspectives: Tree-atmosphere interaction responds to water-related stem variations." Tim van Emmerik, Susan Steele-Dunne, Pierre Gentine, Rafael S. Oliveira, Paulo Bittencourt, Fernanda Barros, Nick van de Giesen, *Biogeosciences*, 15:6439-6449, doi:10.5194/bg-15-6439-2018, 2018

"Uchimizu: A Cool(ing) Tradition to Locally Decrease Air Temperature." Anna Solcerova, Tim van Emmerik, Koen Hilgersom, Frans van de Ven, Nick van de Giesen, *Water*, 10:741, doi:10.3390/w10060741, 2018

“Potential of Cost-Efficient Single Frequency GNSS Receivers for Water Vapor Monitoring.” Andreas Krietemeyer, Marie-claire ten Veldhuis, Hans van der Marel, Eugenio Realini, Nick van de Giesen, *Remote Sensing*, 10:1493; doi:10.3390/rs10091493, 2018

“Global impacts of the meat trade on in-stream organic river pollution: the importance of spatially distributed hydrological conditions.” Yingrong Wen, Gerrit Schoups, Nick van de Giesen, *Environmental Research Letters*, 13(1):014013, doi:10.1088/1748-9326/aa94f6, 2018

“Monitoring land subsidence in Yangon, Myanmar using Sentinel-1 persistent scatterer interferometry and assessment of driving mechanisms.” Teije van der Horst, Martine M. Rutten, Nick C. van de Giesen, Ramon F. Hanssen, *Remote Sensing of Environment*, 217:101-110, doi:10.1016/j.rse.2018.08.004, 2018

“Quantifying the connections - linkages between land-use and water in the Kathmandu Valley, Nepal.” Jeffrey C. Davids, Martine M. Rutten, Ram Devi T. Shah, Deep N. Shah, Nischal Devkota, Petra Izeboud, Anusha Pandey, Nick van de Giesen, *Environmental Monitoring and Assessment*, 190:304, doi:10.1007/s10661-018-6687-2, 2018

“Critical scales to explain urban hydrological response: an application in Cranbrook, London.” Elena Cristiano, Marie-Claire ten Veldhuis, Santiago Gaitan, Susana Ochoa Rodriguez, Nick van de Giesen, *Hydrology and Earth System Science*, 22:2425–2447, doi:10.5194/hess-22-2425-2018, 2018

“Skin Effect of Fresh Water Measured Using Distributed Temperature Sensing.”

Anna Solcerova, Tim van Emmerik, Frans van de Ven, John Selker, Nick van de Giesen, *Water*, 10:214, doi:10.3390/w10020214, 2018

“An axisymmetric non-hydrostatic model for double-diffusive water systems.” Koen Hilgersom, Marcel Zijlema, Nick van de Giesen, *Geoscientific Model Development*, 11:521-540, doi:10.5194/gmd-11-521-2018, 2018

“Deduction of reservoir operating rules for application in global hydrological models.”

Hubertus M. Coerver, Martine M. Rutten, Nick C. van de Giesen, *Hydrology and Earth System Science*, 22:831-851, doi:10.5194/hess-22-831-2018, 2018

“Measurements and Observations in the XXI century (MOXXI): innovation and multi-disciplinarity to sense the hydrological cycle.” Flavia Tauro, John Selker, Nick van de Giesen, Tommaso Abrate, Remko Uijlenhoet, Maurizio Porfiri, Salvatore Manfreda, Kelly Caylor, Tommaso Moramarco, Jerome Benveniste, Giuseppe Ciraolo, Lyndon Estes, Alessio Domeneghetti, Matthew T. Perks, Chiara Corbari, Ehsan Rabiei, Giovanni Ravazzani , Heye Bogena, Antoine Harfouche, Luca Brocca, Antonino Maltese, Andy Wickert Department of Earth Sciences, University of Minnesota, Minneapolis, Minnesota, USA, Angelica Tarpanelli, Stephen Good, Jose Manuel Lopez Alcala, Andrea Petroselli, Christophe Cudennec, Theresa Blume, Rolf Hut, Salvatore Grimaldi, *Hydrological Sciences Journal*, doi:10.1080/02626667.2017.1420191, 2018

“The effects of small water surfaces on turbulent flow in the atmospheric boundary layer: URANS approach implemented in OpenFOAM.” Ali Abbasia, Frank Ohene Annor, Nick van de Giesen, *Environmental Modelling & Software*, 101:268–288, doi:10.1016/j.envsoft.2017.12.013, 2018

“Mapping Surface Heat Fluxes by Assimilating SMAP Soil Moisture and GOES Land Surface Temperature Data.” Yang Lu, Susan C. Steele-Dunne, Leila Farhadi, Nick van de Giesen, *Water Resources Research*, doi:10.1002/2017WR021415, 2017

“Validation of IMERG Precipitation in Africa.” A.K. Dezfuli, C.M. Ichoku, G.J. Huffman, K.I. Mohr, J.S. Selker, N. van de Giesen, R. Hochreutener, F.O. Annor, *Journal of Hydrometeorology*, 18(10):2817-2825, doi:10.1175/JHM-D-17-0139.1, 2017

“The impact of an exhibition on risk awareness of the general public in mountainous areas.” Marie K.M. Charrière, Sandra J. Junier, Thom A. Bogaard, Erik Mostert, Jean-Philippe Malet, Nick C.van de Giesen, *International Journal of Disaster Risk Reduction*, 25:36-59, doi:10.1016/j.ijdrr.2017.07.011, 2017

“A Framework to Simulate Small Shallow Inland Water Bodies in Semi-arid Regions.” Ali Abbasi, Frank Ohene Annor, Nick van de Giesen, *Advances in Water Resources*, 110:77-96, doi:10.1016/j.advwatres.2017.09.023, 2017

“The Impacts of Heating Strategy on Soil Moisture Estimation Using Actively Heated Fiber Optics.” Jianzhi Dong, Rosa Agliata, Susan Steele-Dunne, Olivier Hoes, Thom Bogaard, Roberto Greco, Nick van de Giesen, *Sensors* 7:2102, doi:10.3390/s17092102, 2017

“Efficient multi-scenario Model Predictive Control for water resources management with ensemble streamflow forecasts.” Xin Tian, Rudy R. Negenborn, Peter-Jules van Overloop, José María Maestre, Anna Sadowska, Nick van de Giesen, *Advances in Water Resources*, 109:58–68, doi:10.1016/j.advwatres.2017.08.015, 2017

“The eWaterCycle project.” N. Drost, R. Hut, M. Van Meersbergen, E.H. Sutanudjaja, M. Bierkens, N. van De Giesen, *Proceedings of the 2016 IEEE 12th International Conference on e-Science*, 430, doi:710.1109/eScience.2016.7870930, 2017

“Evaporation from Savanna and Agriculture in Semi-Arid West Africa.” N.C. Ceperley, T, Mande, N. van de Giesen, N., S. Tyler, H. Yacouba, M.B. Parlange, *Hydrology and Earth System Science*, 21:4149-4167, doi:10.5194/hess-2016-672, 2017

“Water stress detection in the Amazon using radar.” Tim van Emmerik, Susan Steele-Dunne, Aaron Paget, Rafael S. Oliveira, Paulo R. L. Bittencourt, Fernanda de V. Barros, Nick van de Giesen, *Geophysical Research Letters*, doi:10.1002/2017GL073747, 2017

“Spatial and temporal variability of rainfall and their effects on hydrological response in urban areas -– a review.” Elena Cristiano, Marie-claire ten Veldhuis, and Nick van de Giesen, *Hydrology and Earth System Sciences*, 21:3859-3878, doi:10.5194/hess-2016-538, 2017

“A Shazam-like Household Water Leakage Detection Method.*”* Solomon Seyoum, Leonardo Alfonso, Schalk Jan van Andel, Wouter Koole, Ad Groenewegen, Nick van de Giesen, *Procedia Engineering*, 186:452-459, doi: 10.1016/j.proeng.2017.03.253, 2017

“Effects of atmospheric stability conditions on heat fluxes from small water surfaces in (semi-)arid regions.” Ali Abbasi, Frank Ohene Annor, Nick van de Giesen, *Hydrological Sciences Journal*, 62(9):1422-1439, doi:10.1080/02626667.2017.1329587, 2017

“Measuring Tree Properties and Responses Using Low-Cost Accelerometers.” Tim van Emmerik, Susan Steele-Dunne, Rolf Hut, Pierre Gentine, Marceau Guerin, Rafael S. Oliveira, Jim Wagner, John Selker, Nick van de Giesen, *Sensors*, 17:1098, doi:10.3390/s17051098, 2017

“Continuity vs. the Crowd—Tradeoffs Between Continuous and Intermittent Citizen Hydrology Streamflow Observations.” Jeffrey C. Davids, Nick van de Giesen, Martine Rutten, *Environmental Management*, doi:10.1007/s00267-017-0872-x, 2017

“Let hydrologists learn the latest computer science by working with Research Software Engineers (RSEs) and not reinvent the waterwheel ourselves. A comment to "Most Computational Hydrology is not Reproducible, so is it Really Science?” R.W. Hut, N.C. van de Giesen, N. Drost, *Water Resources Research*, doi:10.1002/2017WR020665, 2017

“Organic pollution of rivers: Combined threats of urbanization, livestock farming and global climate change.” Yingrong Wen, Gerrit Schoups, Nick van de Giesen, *Scientific Reports*, 7:43289, doi:10.1038/srep43289, 2017

"Systematic high-resolution assessment of global hydropower potential." O.A.C. Hoes, L.J.J. Meijer, R.J. van der Ent, N.C. van de Giesen, *PLoS ONE*, 12(2): e0171844. doi:10.1371/journal.pone.0171844, 2017

"Dielectric Response of Corn Leaves to Water Stress." Tim van Emmerik, Susan C. Steele-Dunne, Jasmeet Judge, Nick van de Giesen, *IEEE Geoscience and Remote Sensing Letters*, 99, doi:10.1109/LGRS.2016.2606662, 2017

"Estimating surface turbulent heat fluxes from land surface temperature and soil moisture observations using the particle batch smoother." Lu, Y., J. Dong, S. C. Steele-Dunne, N. van de Giesen (2016), *Water Resources Research*, 52:9086-9108, doi:10.1002/2016WR018943, 2016

"Determining water reservoir characteristics with global elevation data." Van Bemmelen, C. W. T., M. Mann, M. P. de Ridder, M. M. Rutten, and N. C. van de Giesen, *Geophysical Research Letters*, 43:11,278-11,286, doi:10.1002/2016GL069816, 2016

"Mapping high-resolution soil moisture and properties using distributed temperature sensing data and an adaptive particle batch smoother." Jianzhi Dong, Susan C. Steele-Dunne, Tyson E. Ochsner, Christine E. Hatch, Chadi Sayde, John Selker, Scott Tyler, Michael H. Cosh, Nick van de Giesen, *Water Resources Research*, 52(10):7690–7710, doi:10.1002/2016WR019031, 2016

"Do green roofs cool the air?" Anna Solcerova, Frans van de Ven, Mengyu Wang, Michiel Rijsdijk, Nick van de Giesen, *Building and Environment*, doi: 10.1016/j.buildenv.2016.10.021, 2016

"Model Predictive Control for water level control in the case of spills." Xin Tian, Boran Ekin Aydin, Rudi Negenborn, Nick van de Giesen, Maria Pepe Maestre, *Journal of Irrigation and Drainage Engineering*, B4016006, 2016

"Can urban pluvial flooding be predicted by open spatial data and weather data?" S. Gaitan, , N.C. van de Giesen, J.A.E. ten Veldhuis. *Environmental Modelling & Software*, 85:156–171, doi:10.1016/j.envsoft.2016.08.007, 2016

"Earth's surface water change over the past 30 years." Donchyts, Gennadii, Fedor Baart, Hessel Winsemius, Noel Gorelick, Jaap Kwadijk, Nick van de Giesen. *Nature Climate Change* 6, 9:810-813, doi:10.1038/nclimate3111, 2016

"Practical considerations for enhanced-resolution coil-wrapped distributed temperature sensing." Koen Hilgersom, Tim van Emmerik, Anna Solcerova, Wouter Berghuijs, John Selker, Nick van de Giesen, *Geoscientific Instrumentation Methods and Data Systems*, 5:151-162, doi:10.5194/gi-5-151-2016, 2016

"Three-dimensional dense distributed temperature sensing for measuring layered thermohaline systems," Hilgersom, K. P., N. C. van de Giesen, P. G. B. de Louw, and M. Zijlema. *Water Resources Research*, 52, doi:10.1002/2016WR019119, 2016

"Estimating soil moisture and soil thermal and hydraulic properties by assimilating soil temperatures using a particle batch smoother," Jianzhi Dong, Susan C. Steele-Dunne, Tyson E. Ochsner, Nick van de Giesen. *Advances in Water Resources*, 91:104-116,doi:10.1016/j.advwatres.2016.03.008, 2016

"A 30m resolution water mask including estimation of positional accuracy of rivers using Landsat 8, SRTM and OpenStreetMap: A case study in the Murray-Darling Basin, Australia." Gennadii Donchyts, Jaap Schellekens, H.C. (Hessel) Winsemius, Elmar Eisemann, Nick Van De Giesen, *Remote Sensing*, 8(5):386, doi:10.3390/rs8050386, 2016

"Observed Soil Moisture–Precipitation Feedback in Illinois: A Systematic Analysis over Different Scales." H. M. Duerinck, R. J. van der Ent, N. C. van de Giesen, G. Schoups, V. Babovic, Pat J.-F. Yeh, Journal of Hydrometeorology, 17(6):1645-1660, doi:10.1175/JHM-D-15-0032.1, 2016

"Investigation of Temperature Dynamics in Small and Shallow Reservoirs, Case Study: Lake Binaba, Upper East Region of Ghana." Ali Abbasi, Frank Ohene Annor, Nick Van De Giesen, *Water*, 8(3):84; doi:10.3390/w8030084, 2016

"Decision support method to systematically evaluate first level inspections of the functional status of check dams." Vivian Juliette Cortes Arevalo, Simone Sterlacchini, Thom Bogaard, Sandra Junier, Nick van de Giesen, *Structure and Infrastructure Engineering*, doi:10.1080/15732479.2016.1144619, 2016

"A comparison between leaf dielectric properties of stressed and unstressed tomato plants." Tim van Emmerik, Susan Steele-Dunne, Jasmeet Judge, Nick van de Giesen, *IEEE Transactions on Geoscience and Remote Sensing*, 53(7):3855-3869, doi:10.1109/TGRS.2014.2386142, 2015

"Removal efficiency of storm water treatment techniques: Standardized full scale laboratory testing." F.C. Boogaard, F. van de Ven, J.G. Langeveld, J. Kluck, N. van de Giesen, *Urban Water Journal*, doi:10.1080/1573062X.2015.1092562, 2015

"Reduction of Used Memory Ensemble Kalman Filtering (RumEnKF): A data assimilation scheme for memory intensive, high performance computing." Rolf Hut, Barnabas A. Amisigo, Susan Steele-Dunne, Nick van de Giesen, *Advances in Water Resources*, 86:273-283, doi:10.1016/j.advwatres.2015.09.007, 2015

"GlobWat – a global water balance model to assess water use in irrigated agriculture." J. Hoogeveen, J-M. Faurès, L. Peiser, J.J. Burke, N.C. Van de Giesen, *Hydrology and Earth System Sciences*, 19:3829-3844, doi:10.5194/hess-19-3829-2015, 2015

"Determining soil moisture by assimilating soil temperature measurements using the Ensemble Kalman Filter." Jianzhi Dong, Susan C Steele-Dunne, Tyson E Ochsner, Nick van de Giesen, *Advances in Water Resources*, 86:340-353, doi:10.1016/j.advwatres.2015.08.11, 2015

"A particle batch smoother for soil moisture estimation using soil temperature observations." Jianzhi Dong. Susan Steele-Dunne, Nick van de Giesen, *Advances in Water Resources*, 10.1016/j.advwatres.2015.05.017, 2015

"The influence of a eutrophic lake to the river downstream: Temporal and spatial algal composition changes and the driving factors." Qian Yu, Yongcan Chen, Nick van de Giesen, Dejun Zhu, *Water*, 7:2184-2201, doi:10.3390/w7052184, 2015

"Spatial distribution of rainfall-related complaints along urban overland flow-paths." S. Gaitan, J.A.E. ten Veldhuis, N.C. van de Giesen, *Water Resources Management*, doi:10.1007/s11269-015-1006-y, 2015

"Floodplain wetland mapping in the White Volta River Basin of Ghana." Benjamin K. Nyarko, Bernd Diekkrüger, Nick C. Van De Giesen, Paul L.G. Vlek, *GIScience & Remote Sensing*, doi:10.1080/15481603.2015.1026555, 2015

"Design of a Low-Cost Microcontroller-Based Lightning Monitoring Device." Kamau M. Gilbert, Kang'ethe M. Samuel, Kamau I.Stanley, Nick van de Giesen, *Kabarak Journal of Research & Innovation*, 3(1):32-40, 2015

"Weighted bankruptcy rules and transboundary water resources allocation." Hojjat Mianabadi, Erik Mostert, Saket Pande, Nick Van de Giesen, *Water Resources Management*, doi:10.1007/s11269-015-0942-x, 2015

"On the sensitivity of urban hydrodynamic modelling to rainfall spatial and temporal resolution." G. Bruni, R. Reinoso, N.C. van de Giesen, F.H.L.R. Clemens, J.A.E. ten Veldhuis, *Hydrology and Earth System Sciences*, 19:691-709, doi:10.5194/hess-19-691-2015, 2015

"Impact of Diurnal Variation in Vegetation Water Content on Radar Backscatter from Maize During Water Stress." Tim van Emmerik, Susan Steele-Dunne, Jasmeet Judge, Nick van de Giesen, *IEEE Transactions on Geoscience and Remote Sensing*, doi:10.1109/TGRS.2014.2386142, 2015

"Fiber optic distributed temperature sensing for the determination of air temperature." S.A.P. de Jong, J. Slingerland, N.C. van de Giesen, *Atmospheric Measurement Techniques*, 8:335-339, doi:10.5194/amt-8-335-2015, 2015

"Hyper-resolution global hydrological modelling: what's next? 'Everywhere and locally relevant.'" Marc F.P. Bierkens, Victoria A. Bell, Peter Burek, Nathaniel Chaney, Laura Condon, Cédric H. David, Ad de Roo, Petra Döll, Niels Drost, James S. Famiglietti, Martina Flörke, Dave Gochis, Paul Houser, Rolf Hut, Stefan Kollet, Reed Maxwel, John T. Reager, Luis Samaniego, Edward Sudicky, Edwin H. Sutanudjaja, Nick van de Giesen, Hessel Winsemius, Eric F. Wood, *Hydrological Processes*, 29(2):310-320, doi:10.1002/hyp.10391, 2015

“Highly parameterized inversion of groundwater reactive transport for a complex field site.” Luca Carniato, Gerrit Schoups, Nick van de Giesen, Piet Seuntjens, Leen Bastiaens, Hans Sapione, *Journal of Contaminant Hydrology*, 173:38-58, doi:10.1016/j.jconhyd.2014.12.001, 2015

“Operational flood control of a delta system using Large Time Step Model Predictive Control.” Xin Tian, Peter-Jules van Overloop, Rudy Negenborn, Nick van de Giesen, *Advances in Water Resources*, 75:1-13, doi:10.1016/j.advwatres.2014.10.010, 2015

“Development of a risk-based framework to integrate flood insurance.” Muhammad Atiq Ur Rehman Tariq, W.A. Jiwala, Nick van de Giesen, Olivier Hoes. *Journal of Flood Risk Management*, 7(4): 291-307, doi:10.1111/jfr3.12056, 2014

“Short-term Management of Water Systems using Ensemble Forecasts in Tree-Based Model Predictive Control.” Raso, L., D. Schwanenberg, N. van de Giesen, P.J. van Overloop, *Advances in Water Resources*, 71:200-208, doi:10.1016/j.advwatres.2014.06.009, 2014

“Mapping Variability of Soil Water Content and Flux across 1-1,000 m scales using the Actively Heated Fiber Optic Method.” Sayde, C., J. B. Buelga, L.E. Rodríguez-Sinobas, L.E. Khoury, M. English, N. van de Giesen, J.S. Selker, *Water Resources Research*, doi:10.1002/2013WR014983, 2014

“Evaluating the Infiltration Performance of 10 Dutch Permeable Pavements Using a New Full-scale Infiltration Testing Method.” Floris Boogaard, Terry Lucke, Nick van de Giesen, Frans van de Ven, *Water*, 6(7):2070-2083; doi:10.3390/w6072070, 2014

“Inference of reactive transport model parameters using a Bayesian multivariate approach.” Luca Carniatio, Gerrit Schoups, Nick Van de Giesen, *Water Resources Research*, 50:6406 6427, doi:10.1002/2013WR014156, 2014

“Assessment of Bankruptcy Methods for Conflict Resolution in Natural Resource Allocation Problems.” Hojjat Mianabadi, Erik Mostert, Mahdi Zarghami, Nick van de Giesen, Journal of Environmental Management, 144:152-159, doi: 10.1016/j.jenvman.2014.05.018, 2014

“The Trans-African Hydro-Meteorological Observatory (TAHMO).” Nick van de Giesen, Rolf Hut, John Selker, WIREs Water, doi: 10.1002/wat2.1034, 2014

“Comment on "Capabilities and limitations of tracing spatial temperature patterns by fiber-optic distributed temperature sensing” by L. Rose, S. Krause, and N.J. Cassidy.” J.S. Selker, Scott Tyler, Nick van de Giesen, Water Resources Research, doi: 10.1002/2013WR014979, 2014

“Application of the Ordered Weighted Averaging (OWA) method to the Caspian Sea conflict.” Hojjat Mianabadi, Majid Sheikhmohammady, Erik Mostert, Nick van de Giesen, *Stochastic Environmental Research and Risk Assessment*, doi:10.1007/s00477-014-0861-z, 2014

“Stormwater Quality Characteristics in (Dutch) Urban Areas and Performance of Settlement Basins.” Floris C. Boogaard, Frans van de Ven, Jeroen G. Langeveld, Nick van de Giesen, Challenges 5(1):112-122; doi:10.3390/challe5010112, 2014

“Remotely sensed monitoring of small reservoir dynamics: A Bayesian approach.” Dirk Eilander, Frank O. Annor, Lorenzo Iannini, Nick van de Giesen, *Remote Sensing*, 6(2):11911210, doi:10.3390/rs6021191, 2014

“Medicinal Footprint of the population of the Rhine basin.” Rolf Hut, Nick van de Giesen, Corine J. Houtman, *Environmental Research Letters*, 8:044057, doi: 10.1088/1748-9326/8/4/044057, 2013

“Probabilistic scenario development to estimate future runoff in the Yellow River Basin, China.” Dong, Congli, Gerrit Schoups, Nick van de Giesen. *Environmental Engineering and Management Journal*, 12(7):1309-1528, 2013

“Scenario development for water resource planning and management: A review.” Dong, Congli, Gerrit Schoups, Nick van de Giesen. *Technological Forecasting and Social Change*, 80(4): 749-761, doi:10.1016/j.techfore.2012.09.015, 2013

"An information-theoretical perspective on weighted ensemble forecasts." Weijs, Steven V, Nick van de Giesen. *Journal of Hydrology*, 498:177–190, doi: 10.1016/j.jhydrol.2013.06.033, 2013

"Data Compression to Define Information Content of Hydrological Time series." Steven V. Weijs, Nick van de Giesen, Marc B. Parlange, *Hydrology and Earth System Sciences*, 17:3171-3187, doi:10.5194/hess-17-3171-2013, 2013

"Development of a risk-based framework to integrate flood insurance." Muhammad Atiq Ur Rehman Tariq, W.A. Jiwala, Nick van de Giesen, Olivier Hoes. *Journal of Flood Risk Management*, doi:10.1111/jfr3.12056, 2013

"Model reduction in model predictive control of combined water quantity and quality in open channels." Xu M., P.J. van Overloop, N.C. van de Giesen, *Environmental Modelling & Software*, 42:72-87, doi:10.1016/j.envsoft.2012.12.008, 2013

"HydroZIP: How hydrological knowledge can be used to improve compression of hydrological data." Steven V.Weijs, Nick van de Giesen, Marc B. Parlange, *Entropy*, 15:1289-1310, doi:10.3390/e15041289, 2013

"Measuring heat balance residual at lake surface using Distributed Temperature Sensing." T.H.M. van Emmerik, A. Rimmer, Y. Lechinsky, K.J.R. Wenker, S. Nussboim, N.C. van de Giesen, *Limnology and Oceanography: Methods*, 11:79–90, doi:10.4319/lom.2013.11.79, 2013

"The influence of hard substratum reflection and calibration profiles on in situ fluorescence measurements of benthic microalgal biomass." Corina Carpentier, Anna Dahlhaus, Nick van de Giesen, Blahoslav Maršálek, *Environmental Science: Processes & Impacts*, 15:783–793, doi:10.1039/C3EM30654B, 2013

"Scenario development for water resource planning and management: A review." Congli Dong, Gerrit Schoups, Nick van de Giesen, *Technological Forecasting and Social Change*, doi:10.1016/j.techfore.2012.09.015, 2012

"Heated Optical Fiber for Distributed Soil-Moisture Measurements: a Lysimeter Experiment." Francesco Ciocca, Ivan Lunati, Nick Van de Giesen, Marc B. Parlange, *Vadose Zone Journal*, doi:10.2136/vzj2011.0199, 2012

"Tree Structure Generation from Ensemble Forecasts for Real Time Control." Luciano Raso, Nick van de Giesen, Philip Stive, Peter-Jules van Overloop, Dirk Schwanenberg, *Hydrological Processes*, 27:75-82, doi:10.1002/hyp.9473, 2012

"De Saint-Venant Equations-Based Model Assessment in Model Predictive Control of Open Channel Flow." M. Xu, R.R. Negenborn, P.J. van Overloop, N.C. van de Giesen. *Advances in Water Resources*, 49:37–45, doi:10.1016/j.advwatres.2012.07.004, 2012

"Learning from collaborative research in water management practice." G.T. Raadgever, E. Mostert, N.C. van de Giesen, *Water Resources Management*, 26:3251–3266, doi: 10.1007/s11269-012-0070-9, 2012

"Floods and Flood Management in Pakistan." Muhammad Atiq Ur Rehman Tariq, Nick van de Giesen. *Physics and Chemistry of the Earth*, 47–48:11–20, doi: 10.1016/j.pce.2011.08.014, 2012

"Diurnal differences in global ERS scatterometer backscatter observations of the land surface." Jan Friesen, Susan C Steele-Dunne, Nick van de Giesen, *IEEE Transactions on Geoscience and Remote Sensing*, 50(7):2618-2629, doi:10.1109/TGRS.2012.2193889, 2012

"Using Diurnal Variation in Backscatter to Detect Vegetation Water Stress." Susan C. Steele-Dunne, Jan C. Friesen, Nick van de Giesen. *IEEE Transactions on Geoscience and Remote Sensing*, 50(7):2595-2602, doi:10.1109/TGRS.2012.2194156, 2012

"Double-Ended Calibration of Fiber-Optic Raman Spectra Distributed Temperature Sensing Data." Nick van de Giesen, Susan Steele-Dunne, Jop Jansen, Olivier Hoes, Mark B. Hausner, Scott Tyler, John Selker. *Sensors*, 12(5):5471-5485; doi:10.3390/s120505471, 2012

"Reply to comment by Keith J. Beven and Hannah L. Cloke on ''Hyperresolution global land surface modeling: Meeting a grand challenge for monitoring Earth's terrestrial water.''" Eric F. Wood, Joshua K. Roundy, Tara J. Troy, Rens van Beek, Marc Bierkens, Eleanor Blyth, Ad de Roo, Petra Döll, Mike Ek, James Famiglietti, David Gochis, Nick van de Giesen, Paul Houser, Peter Jaffe, Stefan Kollet, Bernhard Lehner, Dennis P. Lettenmaier, Christa D. Peters-Lidard, Murugesu Sivapalan, Justin Sheffield, Andrew J. Wade, Paul Whitehead. *Water Resources Research*, W01802, doi:10.1029/2011WR011202, 2012

"Carbon monoxide as a tracer of gas transport in snow and other natural porous media." Hendrik Huwald, John Selker, Scott Tyler, Marc Calaf-Bracons, Nick Van de Giesen, Marc Parlange. *Geophysical Research Letters*, 39, L02504, doi:10.1029/2011GL050247, 2012

"Influence of Tree Age and Variety on Allometric Characteristics and Water Use of Mangifera indica L. Growing in Plantation." Philip G. Oguntunde, Johnson T. Fasinmirin, Nick van de Giesen. *Journal of Botany*, 2011, ID 824201, doi:10.1155/2011/824201, 2011

"Calibrating single-ended fiber-optic Raman spectra distributed temperature sensing data." Mark B. Hausner, Francisco Suárez, Kenneth Glander, Nick van de Giesen, John S. Selker, Scott W. Tyler. *Sensors*, 11:10859-10879, doi:10.3390/s111110859, 2011

"Seasonal Variation of Temporal Patterns of Water Flux in a Cashew Orchard Under Sub-humid Tropical Conditions." Oguntunde, Philip G., Ayodele E. Ajayi, Jan Friesen, Nick van de Giesen, Paul L. G. Vlek. *Journal of Crop Improvement*, 25(5):504-520, doi:10.1080/15427528.2011.591482, 2011

"Shade Estimation Over Streams Using Distributed Temperature Sensing." A.C. Petrides, J. Huff, A. Arik, N. Van de Giesen, A.M. Kennedy, C.K. Thomas, J.S. Selker. *Water Resources Research*, doi: 10.1029/2010WR009482

"Accounting for observational uncertainty in forecast verification: an information-theoretical view on forecasts, observations and truth. Steven V. Weijs, Nick van de Giesen. *Monthly Weather Review*, doi: 10.1175/2011MWR3573.1, 2011

"Scale Effects in Hortonian Surface Runoff: Theory, models, and field data." Nick van de Giesen,Tjeerd-Jan Stomph, Ayodele Ebenezer Ajayi, Fafré Bagayoko. *Agriculture, Ecosystems and Environment*, doi:10.1016/j.agee.2010.06.006, 2010

"Estimating soil heat flux using Distributed Temperature Sensing." J.H.A.M. Jansen, P.M. Stive, N.C. van de Giesen, Scott W. Tyler, S.C. Steele-Dunne, L. Williamson, *IAHS Publ. 343*: 140-144, 2011

"Hyper-Resolution Global Land Surface Modeling: Meeting a Grand Challenge for Monitoring Earth's Terrestrial Water." Eric F. Wood, Joshua K. Roundy, Tara J. Troy, Rens van Beek, Marc Bierkens, Eleanor Blyth, Ad de Roo, Petra Döll, Mike Ek, James Famiglietti, David Gochis, Nick van de Giesen, Paul Houser, Peter Jaffe1, Stefan Kollet, Bernhard Lehner, Dennis P. Lettenmaier, Christa Peters-Lidard, Murugesu Sivapalan, Justin Sheffield1, Andrew Wade, Paul Whitehead, *Water Resources Research*, doi:10.1029/2010WR010090, 2011

"Scale Effects in Hortonian Surface Runoff: Theory, models, and field data." Nick van de Giesen,Tjeerd-Jan Stomph, Ayodele Ebenezer Ajayi, Fafré Bagayoko. *Agriculture, Ecosystems and Environment*, doi:10.1016/j.agee.2010.06.006, 2010

"A relation between extreme daily precipitation and extreme short term precipitation." Yanina L. Romero, J. Bessembinder, N.C. van de Giesen, F.H.M. van de Ven. *Climatic Change*, doi:10.1007/s10584-010-9955-x, 2010

"Designing an evaluation control systems of the Dez Main Canal." S. Isapoor, A. Montazar, P.J. van Overloop, N. van de Giesen. *Irrigation and Drainage*, 60:70-79, doi:10.1002/ird.545, 2011

"On the Study of Control Effectiveness and Computational Efficiency of Reduced Saint-Venant Model in Model Predictive Control of Open Channel Flow." M. Xu, P. J. van Overloop, N. C. van de Giesen. *Advances in Water Resources*, 34:282–290, doi:10.1016/j.advwatres.2010.11.009, 2011

"Why hydrological forecasts should be evaluated using information theory." Steven V. Weijs, Gerrit Schoups, Nick van de Giesen, *Hydrology and Earth System Sciences*, 14, 2545-2558, doi: 10.5194/hess-14-2545-2010, 2010

"Understanding Heat Transfer in the Shallow Subsurface Using Temperature Observations." Martine M. Rutten, Susan C. Steele-Dunne, Jasmeet Judge, Nick van de Giesen, *Vadose Zone Journal*, 9: 1034 – 1045, doi: 10.2136/vzj2009.0174, 2010

"Corruption of accuracy and efficiency of Markov chain Monte Carlo simulation by inaccurate numerical implementation of conceptual hydrologic models." G. Schoups, J.A. Vrugt, F. Fenicia, N.C. van de Giesen. *Water Resources Research*, W10530, doi: 10.1029/2009WR008648, 2010

"Productivity of Irrigation Technologies in the White Volta Basin." E.A. Ofosu, P. van der Zaag, N.C. van de Giesen, S.N. Odai, *Physics and Chemistry of the Earth*, doi:10.1016/j.pce.2010.07.005, 2010

"Scale Effects in Hortonian Surface Runoff: Theory, models, and field data." Nick van de Giesen,Tjeerd-Jan Stomph, Ayodele Ebenezer Ajayi, Fafré Bagayoko. *Agriculture, Ecosystems and Environment*, doi:10.1016/j.agee.2010.06.006, 2010

"Kullback-Leibler divergence as a forecast skill score with classical reliability-resolution-uncertainty-decomposition." Steven V. Weijs, Ronald van Nooyen, Nick van de Giesen. *Monthly Weather Review*, doi: 10.1175/2010MWR3229.1, 2010

"Feasibility of soil moisture monitoring with heated fiber optics." C. Sayde, C. Gregory, M. G. Rodriguez, N. Tufillaro, S. Tyler, N. van de Giesen, M. English, R. Cuenca, J. S. Selker, *Water Resources Research*, 46, W06201, doi:10.1029/2009WR007846, 2010

"Identification of resonance waves in open water channels." P.J. van Overloop, I.J. Miltenburg, X. Bombois, A.J. Clemmens, R.J.Strand, N.C. van de Giesen, R.Hut. *Control Engineering Practice*, 18:863-872, doi:10.1016/j.conengprac.2010.03.010, 2010

"A comparison of an implicit and explicit connection of fast and slow flowing components of a water system." A.J.J. Vergroesen, N.C. van de Giesen, F.H.M.van de Ven. *Journal of Hydrological Sciences*, 55(3):287-302, 2010

"Adapting to climate change in the Volta Basin, West Africa." Nick van de Giesen, Jens Liebe, Gerlinde Jung. *Current Science*, 98(8): 1033-1037, 2010

"Feasibility of Soil Moisture Estimation using Passive Distributed Temperature Sensing." S.C. Steele-Dunne, M. M. Rutten, D. M. Krzeminska, M. Hausner, S.W. Tyler, J.S. Selker, T.A. Bogaard, N.C. van de Giesen. *Water Resources Research*, 46, W03534, doi:10.1029/2009WR008272, 2010

"Use of isotopes to study floodplain wetland and river flow interaction in the White Volta River basin, Ghana." Benjamin Kofi Nyarko, David Kofi Essumang, Moses J. Eghan, Barbara Reichert, Nick van de Giesen, Paul Vlek. *Isotopes in Environmental and Health Studies*, 46(1): 91106, doi: 10.1080/10256010903388543, 2010

"Real-time Control of Combined Surface Water Quantity and Quality: Polder Flushing." M. Xu, P. J. van Overloop, N. C. van de Giesen, G. S. Stelling. *Water Science and Technology*, 61(4): 869–878, doi:10.2166/wst.2010.847, 2010

"Identifying seepage in ditches and canals in polders in The Netherlands by Distributed Temperature Sensing." O.A.C. Hoes, W.M.J. Luxemburg, M.C. Westhof, N.C. van de Giesen, J.Selker. *Lowland Technology International*, 11(2): 21-26, 2009

"Locating illicit connections in storm water sewers using fiber-optic distributed temperature sensing." Olivier Hoes, Remy Schilperoort, Wim Luxemburg, Francois Clemens, Nick van de Giesen. *Water Research*, doi:10.1016/j.watres.2009.08.020, 2009

"Uncertainty assessment in surface and subsurface hydrology: An overview." Alberto Montanari, Cristine A. Shoemaker, Nick van de Giesen. *Water Resources Research*, 45, doi:10.1029/2009WR008471, 2009

"Determining Watershed Response in Data Poor Environments with Remotely Sensed Small Reservoirs as Runoff Gauges." J. R. Liebe, N. van de Giesen, M. Andreini, M. T. Walter, T. S. Steenhuis. *Water Resources Research*, 45, W07410, doi:10.1029/2008WR007369, 2009

"Suitability and limitations of ENVISAT ASAR for monitoring small reservoirs in a semi-arid area." Jens R. Liebe, Nick van de Giesen, Marc S. Andreini, Tammo S. Steenhuis, and M. Todd Walter. *IEEE Transactions on Geoscience and Remote Sensing*, 47(5):1536-1547, doi:10.1109/TGRS.2008.2004805, 2009

"Increased biofuel production in the coming decade: to what extent will it affect global fresh water resources?" Jippe Hoogeveen, Jean-Marc Faurès, Nick van de Giessen. *Irrigation and Drainage* 58(S1): 148-160, doi: 10.1002/ird.479, 2009

"Delineation of small reservoirs using radar imagery in a semi-arid environment: A case study in the Upper East Region of Ghana." F.O. Annor, N. van de Giesen, J. Liebe, P. van de Zaag, A. Tilmant, S.N.Odai. *Physics and Chemistry of the Earth*, 34:309-315, doi:10.1016/j.pce.2008.08.005, 2009

"The sustainable village." Hubert H.G. Savenije, Nick C. van de Giesen. *Physics and Chemistry of the Earth*, 34(1-2):1-2, doi: 10.1016/j.pce.2008.10.054, 2009

"Global Soil Moisture Patterns Observed by Space Borne Microwave Radiometers and Scatterometers." Richard de Jeu, Wolfgang Wagner, Thomas Holmes, Han Dolman, Nick van de Giesen, Jan Friesen. *Surveys in Geophysics*, 29:399–420, doi: 10.1007/s10712-008-9044-0, 2008

"Scatterometer-derived soil moisture calibrated for soil texture with a one-dimensional water-flow model." Remko de Lange, Rob Beck, Nick van de Giesen, Jan Friesen, Allard de Wit, Wolfgang Wagner. *IEEE Transactions on Geoscience and Remote Sensing*, 46(12): 4041-4049, 2008

"Tree rainfall interception measured by stem compression." J. Friesen, C. van Beek, J. Selker, H.H.G. Savenije, N. van de Giesen." *Water Resources Research*, 44, W00D14, doi: 10.1029/2008WR007036, 2008

"Model complexity control for hydrologic prediction." G. Schoups, N. van de Giesen, H. Savenije. *Water Resources Research*, 44, W00B03, doi:10.1029/2008WR006836, 2008

"Identification of stakeholder perspectives on future flood management in the Rhine basin using Q methodology." G. T. Raadgever, E. Mostert, and N. C. van de Giesen. *Hydrology and Earth System Sciences*, 12(4):1097–1109, 2008

"Potential impact of charcoal production on hydro-physical properties of soil, rainfall infiltration and runoff." P.G. Oguntunde, B.J. Abiodun, A. E. Ajayi, N. van de Giesen. *Journal of Plant Nutrition and Soil Science*, 171(4): 591-596, doi:10.1002/jpln.200625185, 2008

"Stormflow generation in two headwater catchments in eastern Amazonia, Brazil." A.J. Wickel, N. C. van de Giesen, T. D. d. A. Sá. *Hydrological Processes*, 22(17): 3285-3293, doi:10.1002/hyp.6917, 2008

"Hydrotope-Based Protocol to Determine Average Soil Moisture Over Large Areas for Satellite Calibration and Validation With Results From an Observation Campaign in the Volta Basin, West Africa." Jan Friesen, Charles Rodgers, Philip G. Oguntunde, Jan M.H. Hendrickx, Nick van de Giesen. *IEEE Transactions on Geoscience and Remote Sensing*, 46(7):1995-2004, doi:10.1109/TGRS.2008.916638, 2008

"A numerical model for simulating Hortonian overland flow on tropical hillslopes with vegetation elements." Ayodele E. Ajayi, Nick van de Giesen, Paul Vlek. *Hydrological Processes*, 22(8):1107-1118, doi: 10.1002/hyp.6665, 2008

"Water use and productivity of two small reservoir irrigation schemes in Ghana's Upper East Region." Joshua W. Faulkner, Tammo Steenhuis, Nick van de Giesen, Marc Andreini, Jens R. Liebe. *Irrigation and Drainage* 57: 151–163, doi: 10.1002/ird.384, 2008

"Seasonal forecast of cooling water problems in the river Rhine." Martine Rutten, Nick van de Giesen, Martin Baptist, Joost Icke, Wim Uijttewaal. *Hydrological Processes*, 22:1037 1045, doi:10.1002/hyp.6988, 2008

"Alternative water management options to reduce vulnerability for climate change in the Netherlands." Rutger de Graaf, Nick van de Giesen, Frans van de Ven. *Natural Hazards*, doi: 10.1007/s11069-007-9184-4, 2007

"Hydrological interdependencies of irrigation systems and river catchments." Maurits Ertsen, Daniel Prieto, Nick van de Giesen. IAHS Publication 317: 3-8, 2007

"Effect of uncertainties on the real-time operation of a lowland water system in The Netherlands." Steven Weijs, Elgard van Leeuwen, Peter-Jules van Overloop, Nick van de Giesen. *IAHS Publication* 313: 463-470, 2007

"The Closed City as a strategy to reduce vulnerability of urban areas for climate change." R.E. de Graaf, N.C. van de Giesen, F.H.M. van de Ven. *Water Science and Technology*, 56(4): 165–173, 2007

"A distributed stream temperature model using high resolution temperature observations." M.C. Westhoff, H . H. G. Savenije, W. M. J . Luxemburg, G. S. Stelling, N. C. van de Giesen, J. S. Selker, L. Pfister, and S. Uhlenbrook. *Hydrology and Earth System Sciences*, 11: 1469-1480, 2007

"A numerical model for simulating Hortonian overland flow on tropical hillslopes with vegetation elements." Ayodele E. Ajayi, Nick van de Giesen, Paul Vlek. *Hydrological Processes*, doi: 10.1002/hyp.6665, 2007

"Spatial and seasonal patterns of diurnal differences in ERS Scatterometer soil moisture data in the Volta Basin, West Africa." Jan C. Friesen, Hessel C. Winsemius, Rob Beck, Klaus Scipal, Wolfgang Wagner, Nick van de Giesen. *IAHS Publication 316*: 47-55, 2007

"Scale effects on water use and water productivity in a rice-based irrigation system (UPRIIS) in the Philippines." M.M. Hafeez, B.A.M. Bouman, N. Van de Giesen, P. Vlek. *Agricultural Water Management*, 92(1-2): 81-89, doi:10.1016/j.agwat.2007.05.006, 2007

"Water Reuse and Cost-Benefit of Pumping at Different Spatial Levels in a Rice Irrigation System in UPRIIS, Philippines." Hafeez, M.M., Bouman, B.A.M., Van de Giesen, N., Mushtaq, S., Vlek, P., Khan, S., *Physics and Chemistry of the Earth*, doi: 10.1016/j.pce.2007.04.011, 2007

"Evaporation mapping at two scales in the White Volta Basin, Upper East Ghana, using optical imagery." Compaoré, H., Hendrickx, J.M.H., Hong, S-h., Friesen, J., van de Giesen, N.C., Rodgers, C., Szarzynski, J., Vlek, P.L.G., *Physics and Chemistry of the Earth*, doi: 10.1016/j.pce.2007.04.021, 2007

"Monthly Streamflow Prediction in the Volta Basin of West Africa: A SISO NARMAX Polynomial Modelling." Amisigo, B.A., van de Giesen, N., Rogers, C., Andah, W.E.I., Friesen, J., *Physics and Chemistry of the Earth*, doi: 10.1016/j.pce.2007.04.019, 2007

"Effects of sand storage dams on ground water levels with examples from Kenya." Hut, R., Ertsen, M., Joeman, N., Vergeer, N., Winsemius, H., van de Giesen, N., *Physics and Chemistry of the Earth*, doi: 10.1016/j.pce.2007.04.006, 2007

"A hybrid metric-conceptual (HMC) model for monthly riverflow prediction in the semi-arid Volta Basin of West Africa." B.A. Amisigo, Nick van de Giesen, W.E.I. Andah, *International Journal of River Basin Management*, 5(1): 57-68, 2007

"Hydrological parameterization through remote sensing in Volta Basin,West Africa." Mohsin Hafeez, Marc Andreini, Jens Liebe, Jan Friesen, Andreas Marx, Nick van de Giesen, *International Journal of River Basin Management*, 5(1): 49-56, 2007

"The GLOWA Volta Project: Interdisciplinary analysis of the impact of global change on a river basin in West Africa." Nick van de Giesen, Charles Rodgers, Paul Vlek, *International Journal of River Basin Management*, 5(1): 3–8, 2007

"Energy partitioning over the West African savanna: Multi-year evaporation and surface conductance measurements in Eastern Burkina Faso." Fafre Bagayoko, Samuel Yonkeu, Jan Elbers, Nick van de Giesen, *Journal of Hydrology*, 334: 545-559, 2007

Integrated Assessment of Water Resources and Global Change --A North-South Analysis. Eric Craswell, Mike Bonnell, Deborah Bossio, Siegfried Demuth and Nick van de Giesen (eds), Springer, ISBN: 978-1-4020-5590-4, 2007

"The GLOWA Volta Project: A framework for water resources decision-making and scientific capacity building in a transnational West African basin." Charles Rodgers, Nick van de Giesen, Wofram Laube, Eva Youkhana. *Water Resources Management*, 21(1): 295–313, 2007 (doi: 10.1007/s11269-006-9054-y)

"Participation; rhetoric and reality. The importance of understanding stakeholders based on a case study in Upper East Ghana." Martine I. Poolman, N.C. van de Giesen. International *Journal of Water Resources Development*, 22(4): 561-573, 2006

"Distributed Fiber Optic Temperature Sensing for Hydrologic Systems." John S. Selker, Luc Thévenaz, Hendrik Huwald, Alfred Mallet, Wim Luxemburg, Nick van de Giesen, Martin Stejskal, Josef Zeman, Martijn Westhoff, Marc B. Parlange. *Water Resources Research*, 2006 42(12), (doi:10.1029/2006WR005326)

"Fiber optics opens window on stream dynamics." Selker, J., N. van de Giesen, M. Westhoff, W. Luxemburg, M. B. Parlange, *Geophysical Research Letters*, 33, L24401, doi:10.1029/2006GL027979, 2006

"Assessment of Gravity Recovery and Climate Experiment (GRACE) temporal signature over the upper Zambezi." H.C. Winsemius, H.H.G. Savenije, N.C. van de Giesen, B.J.J.M. van den Hurk, E.A. Zapreeva, R. Klees. *Water Resources Research*, 2006 42(12), (doi:10.1029/2006WR005326)

"Hydroclimatology of the Volta River Basin in West Africa: Trends and Variability from 1901 to 2002." Philip G. Oguntunde, Jan Friesen, Nick van de Giesen, Hubert H.G. Savenije. *Physics and Chemistry of the Earth* (doi:10.1016/j.pce.2006.02.062)

"Measurement and modelling of transpiration of a rain-fed citrus orchard under subhumid tropical conditions." Philip G. Oguntunde, Nick van de Giesen, Hubert H.G. Savenije. *Agricultural Water Management*, 2006 (doi: 10.1016/j.agwat.2006.06.019)

"The GLOWA Volta Project: A framework for water resources decision-making and scientific capacity building in a transnational West African basin." Charles Rodgers, Nick van de Giesen, Wofram Laube, Eva Youkhana. *Water Resources Management*, 2006 (doi: 10.1007/s11269-006-9054-y)

"West Africa: Volta discharge data quality assessment and use." Joie C. Taylor, Nick van de Giesen, Tammo S. Steenhuis. *Journal of the American Water Resources Association*, 42(4): 1113-1126, 2006

"Surface fluxes and characteristics of drying semi-arid terrain in West Africa." D. Schüttemeier, A.F. Moene, A.A.M. Holtslag, H.A.R. de Bruin, N. van de Giesen. *Boundary-Layer Meteorology*, 2006 (doi: 10.1007/s10546-005-9028-2)

"Using a spatio-temporal dynamic state-space model with the EM algorithm to patch gaps in daily riverflow series, with examples from the Volta Basin, West Africa." B.A. Amisigo, N.C. van de Giesen. *Hydrology and Earth System Sciences*, 9: 209-224, 2005

"Estimation of Small Reservoir Storage Capacities in a semi-arid environment. A case study in the Upper East Region of Ghana." J. Liebe, N. van de Giesen, M. Andreini. *Physics and Chemistry of the Earth*, doi:10.1016/j.pce.2005.06.011, 2005

"Spatial Distribution of Groundwater Production and Development Potential in the Volta River basin of Ghana and Burkina Faso." N. Martin, N.C. van de Giesen. *Water International*, 2005, Vol 30(2): 239-249

"Transpiration measurement and prediction in young cashew trees using sap flow data."

Philip G. Oguntunde, Nick van de Giesen. *Hydrological processes*, 2005, doi:10.1002/hyp.5831

"Tillage and surface moisture effects on bare-soil albedo." Philip G. Oguntunde, Ayodele E. Ajayi, Nick van de Giesen. Soil and Tillage Research, 2005, doi:10.1016/j.still.2004.12.009

"Storage capacity and long-term water balance of the Volta Basin, West Africa." Jan Friesen, Marc Andreini, Winston Andah, Barnabas Amisigo, Nick van de Giesen. IAHS Publication 296:Regional Hydrological Impacts of Climatic Change: 138-145, 2005

"Short- and long-time behavior of aquifer drainage after slow and sudden recharge according to the linearized Laplace equation." Nick van de Giesen, Tammo S.Steenhuis, J.-Yves Parlange. Advances in Water Resources, 2005, doi:10.1016/j.advwatres.2004.12.002

"Water flux in a cashew orchard during a wet-to-dry transition period: analyses of sap flow and eddy correlation measurements." Philip G. Oguntunde, Nick van de Giesen, P.L.G. Vlek, H. Eggers. Earth Interactions, 2004, Vol 8, Paper 15

"Surface Runoff Scale Effects in West African Watersheds: Modeling and Management Options." Nick van de Giesen, Tjeerd Jan Stomph, Nico de Ridder. Agricultural Water Management, 2004, Vol 72(2): 109-130

"Crop growth and development effects on surface albedo for maize and cowpea fields in Ghana, West Africa." Philip G. Oguntunde, Nick van de Giesen. International Journal of Biometeorology, 2004, DOI: 10.1007/s00484-004-0216-4

"Delineation of soil-landscape units along hillslopes to identify the spatial domains of hydrological processes." Park, S.J., Nick van de Giesen. Journal of Hydrology, 2004, 295(1-4): 28-46

"Effects of charcoal production on maize yield, chemical properties and texture of soil." Philip G. Oguntunde, Matthias Fosu, Ayodele E. Ajayi and Nick van de Giesen. Biology and Fertility of Soils, 2004, 39(4): 295-299

"The relationship between Anopheles gambiae density and rice cultivation in the savannah zone and forest zone of Côte d'Ivoire." Olivier J.T. Briët, Joel Dossou-Yovo, Elena Akodo, Nick van de Giesen, Thomas M. Teuscher. Tropical Medicine and International Health, 2003, Vol 8(5): 439-448

"The Hydrology of Inland Valleys in the Sub-Humid Zone of West Africa: Runoff Processes in the M'bé Experimental Watershed." Mutsa C. Masiyandima, Nick van de Giesen, Sitapha Diatta, Pieter N. Windmeijer and Tammo S. Steenhuis. Hydrological Processes, 2003, Vol 17: 1213-1225

"Scale effects of Hortonian overland flow and rainfall-runoff dynamics: Laboratory validation of a process based model." T.J. Stomph, N. de Ridder, T.S. Steenhuis, N.C. van de Giesen. Earth Surface Processes and Landforms, Vol 27(8): 847-855, 2002

"A flowmeter for low discharges from laboratory flumes." T.J. Stomph, N. de Ridder, and N. van de Giesen. Transactions American Society of Agricultural Engineers, 2002, Vol 45(2): 345-349

"The GLOWA-Volta project: Integrated assessment of feedback mechanisms between climate, landuse, and hydrology." Nick van de Giesen, Harald Kunstmann, Gerlinde Jung, Jens Liebe, Marc Andreini, Paul L.G. Vlek. Advances in Global Change Research, 2002, Vol 10: 151-170

"Water Sharing in the Volta Basin." Marc Andreini, Paul Vlek, Nick van de Giesen. IAHS Publication 274: FRIEND2002: 329-335, 2002

"An empirical malaria distribution map for West Africa." Immo Kleinschmidt, Judy Omumbo, Olivier Briët, Nick van de Giesen, Nafomon Sogoba , Nathan Kumasenu Mensah, Pieter Windmeijer, Mahaman Moussa, Thomas Teuscher. Tropical Medicine and International Health, 6(10): 779-786, 2001

"Characterization of West African shallow flood plains with L- and C-Band radar." Nick van de Giesen. IAHS Publication 267: Remote Sensing and Hydrology 2000: 365-367, 2001

"Competition for water resources of the Volta Basin." Nick van de Giesen, Marc Andreini, Annette van Edig, Paul Vlek. IAHS Publication 268: 99-205, IAHS Press, 2001

"A Flume Design for the Study of Slope Length Effects on Runoff." T.J. Stomph, N. de Ridder and N. van de Giesen. Earth surface processes and landforms, 26 (6) pp 647-655, June 2001

"Scale Effects on Hortonian Overland Flow and Rainfall-Runoff Dynamics in a West African Catena Landscape." N. van de Giesen, T.J. Stomph and N. de Ridder. Hydrological Processes, Vol 14(1): 165-175, 2000

"Legal Quagmires: Wetland Use and Development in Rwanda and Zimbabwe." N. van de Giesen and M. Andreini. Law and Anthropology, Vol 9: 105-123, 1997

"Transient Flow to Drains: The Exact Linear Solution Compared with the Linearized Boussinesq Equation." N. van de Giesen, J.Y. Parlange and T.S. Steenhuis. Water Resources Research, Vol 30(11): 3033-3039, 1994

Agricultural Development of Wet Upland Valleys (Marais) in Rwanda, Africa. N. van de Giesen. Ph.D. Thesis, Cornell University, Ithaca, NY, 1993