Curriculum Vitae

Name	MSc W. Terink
First Name	Wilco
Date of Birth	8 June 1981
Nationality	Dutch
Main Disciplines	Hydrology, model development, programming, climate change, remote sensing, operational hydrological services

Summary

I have more than 15 years of experience in hydrology, with a strong focus on the development and application of hydrological models, climate change impact studies, remote sensing applications, programming, processing and analyses of large (spatial) data sets, GIS, and the development of operational hydrological services. I have experience with the use of global datasets and remote sensing data for regions where data availability is scarce.

My experiences were obtained at Environment Canterbury, FutureWater, and Wageningen University.

One of my activities over the last two years was the development of a rainfall-runoff model and water allocation model for the Rakaia River in New Zealand, with the aim to understand the river's natural flow regime and the interaction with its water users. This involved analyzing the effect of hydropower operations and the abstraction of water for irrigation schemes on the flow regime of the river.

I am author and co-author of several scientific publications.

Educational background

2004 – 2006	MSc Hydrology and Quantitative Water Management, Wageningen University, Wageningen, The Netherlands
1999 – 2003	BSc Land and Water Management with a specialization in Water System Analysis, Hogeschool Larenstein, Velp, The Netherlands

Professional experience

2018 – present	Senior Scientist Hydrology, Environment Canterbury, Christchurch, New Zealand
2010 – 2017	Hydrologist, FutureWater, Wageningen, The Netherlands
2007 – 2010	Hydrological Researcher, Wageningen University, Wageningen, The Netherlands
2007 – 2007	Consultant in Urban Water Management, DHV B.V., Deventer, The Netherlands

Computer skills

Hydrological models / tools	Spatial Processes in HYdrology (SPHY), VIC, WEAP, SOBEK, SWAP, HEC-HMS, SWAT, PCRaster
Programming	Python, Matlab, C, Qt

GitHub	https://github.com/WilcoTerink
GIS	QGIS, ArcMap
Other	Linux, Latex

Publications

Peer reviewed publications:

Khanal, S., N. Ridder, H. de Vries, **W. Terink**, B. van den Hurk. 2019. Storm Surge and Extreme River Discharge: A Compound Event Analysis Using Ensemble Impact Modeling. Frontiers in Earth Science, 7, doi: 10.3389/feart.2019.00224.

Terink, W., H. Leijnse, G. van den Eertwegh, R. Uijlenhoet. 2018. Spatial resolutions in areal rainfall estimation and their impact on hydrological simulations of a lowland catchment. Journal of Hydrology, 563, 319-335, doi: 10.1016/j.jhydrol.2018.05.045.

Eekhout, J., J. Hunink, **W. Terink**, J. de Vente. 2018. Why increased extreme precipitation under climate change negatively affects water security. Hydrology and Earth System Sciences Discussions, 1-16, doi:10.5194/hess-2018-161.

Eekhout, J., **W. Terink**, J. de Vente. 2018. Assessing the large-scale impacts of environmental change using a coupled hydrology and soil erosion model. Earth Surface Dynamics Discussions, 1-27, doi: 10.5194/esurf-2018-25.

Vorogushyn, S., Bates, P., De Bruijn, K., Castellarin, A., Kreibich, H., Priest, S., Schröter, K., Bagli, S., Blöschl, G., Domeneghetti, A., Gouldby, B., Klijn, F., Lammersen, R., Neal, J., Ridder, N., **Terink, W.**, Viavattene, C., Viglione, A., Zanardo, S., Merz, B. 2017. Evolutionary leap in large-scale flood risk assessment needed. Wiley Interdisciplinary Reviews: Water, 5, doi: 10.1002/wat2.1266.

Terink, W., A.F. Lutz, G.W.H. Simons, W.W. Immerzeel, P. Droogers. 2015. SPHY v2.0: Spatial Processes in HYdrology. Geoscientific Model Development, 8, 2009-2034, doi:10.5194/gmd-8-2009-2015.

Terink, W., A.F. Lutz, G.W.H. Simons, W.W. Immerzeel, and P. Droogers. 2015. SPHY v2.0: Spatial Processes in Hydrology. Geosci. Model Dev. Discuss., 8, 1687-1748, doi:10.5194/gmdd-8-1687-2015.

Terink, W., Droogers, P., van Dam, J., Simons, G., Voogt, M., Ines, A. 2013. Satellite based data mining to support Egypt's agriculture. Advances in Data Mining, Workshop Proceedings, ICDM 2013, 171-180. ISSN 1164 – 9734. ISBN 978-3-942952-23-1.

Terink, W., W.W. Immerzeel, P. Droogers. 2013. Climate change projections of precipitation and reference evapotranspiration for the Middle East and Northern Africa until 2050. International Journal of Climatology. doi: 10.1002/joc.3650.

Droogers, P., W.W. Immerzeel, **W. Terink, W.**, J. Hoogeveen, M.F.P. Bierkens, L.P.H. van Beek, and B. Debele. 2012. Water resources trends in Middle East and North Africa towards 2050, Hydrol. Earth Syst. Sci., 16, 3101-3114, doi:10.5194/hess-16-3101-2012.

W. Terink, R.T.W.L. Hurkmans, P.J.J.F. Torfs, R. Uijlenhoet. 2010. Evaluation of a bias correction method applied to downscaled precipitation and temperature reanalysis data for the Rhine basin. Hydrological Earth System Sciences.

Hurkmans, R., **Terink, W.**, Uijlenhoet, R., Torfs, P., Jacob, D., Troch, P.A. 2010. Changes in streamflow dynamics in the Rhine Basin under three high-resolution regional climate scenarios. Journal of Climate.

T.L.A. Driessen, R.T.W.L. Hurkmans, **W. Terink**, P. Hazenberg, P.J.J.F. Torfs, R. Uijlenhoet. 2010. The hydrological response of the Ourthe catchment to climate change as modelled by the HBV model. Hydrological Earth System Sciences.

Hurkmans, R.T.W.L., **Terink, W.**, Uijlenhoet, R., Moors, E.J., Troch, P.A., Verburg, P.H. 2009. Effects of land use changes on streamflow generation in the Rhine basin. Water Resources Research.

Ruud Hurkmans, **Wilco Terink**, Remko Uijlenhoet, Eddy Moors, Peter Troch en Peter Verburg. 2009. Effecten van landgebruiksveranderingen op gemiddelde en extreme afvoer in het Rijnstroomgebied. Stromingen.

Technical reports and other publications:

Terink, W. 2021. The Rakaia Water Balance – understanding the river's flow regime and interaction with its water users. Environment Canterbury Report No. R21/11. ISBN 978-1-99-002746-8 (web).

Topelen, J., S. Gabites, **W. Terink**. 2019. Hakatere/Ashburton River Modelling for Consent Review. Environment Canterbury Report No. R19/97. ISBN 978-1-98-859370-8 (web).

Terink, W., W.W. Immerzeel, A.F. Lutz, P. Droogers, S. Khanal, S. Nepal, A.B. Shrestha. 2017. Hydrological and Climate Change Assessment for Hydropower development in the Tamakoshi River Basin, Nepal. FutureWater Report 164.

Droogers, P., M. Kruisheer, F. de Boer, **W. Terink**, M. Andriessen, H. Pelgrum. 2017. Water Balance and Allocation Modelling in Rwanda. FutureWater Report 165.

Jansen, F., **W. Terink**, P.J.J.F. Torfs. 2017. Internship research project: Implementing advanced routing in the SPHY model using the convection-diffusion equation. Internship Report.

Terink, W., S. Khanal. 2016. SPHY: Spatial Processes in Hydrology. Advanced training: input data, sensitivity analysis, model calibration, and scenario analyses. FutureWater Report 160.

De Boer, F., P. Droogers, **W. Terink**. 2016. Filling data gaps using the GapFiller tool. FutureWater Report 158.

Terink, W., A.F. Lutz, G.W.H. Simons, W.W. Immerzeel. 2015. SPHY: Spatial Processes in HYdrology. Case-studies for training. FutureWater Report 144.

Terink, W., A.F. Lutz, W.W. Immerzeel. 2015. SPHY: Spatial Processes in HYdrology. Graphical User-Interfaces (GUIs). FutureWater Report 143.

Terink, W., A.F. Lutz, W.W. Immerzeel. 2015. SPHY v2.0: Spatial Processes in HYdrology. Model theory, installation, and data preparation. FutureWater Report 142.

Hunink, J.E., **W. Terink**, S. Contreras, P. Droogers. 2015. Scoping Assessment of Erosion Levels for the Mahale region, Lake Tanganyika, Tanzania. FutureWater Report 148.

Terink, W., P. Droogers, G.W.H. Simons. 2015. Reservoir module in SPHY. Implemented in SPHY v2.1. FutureWater Report 136.

Terink, W., P. Droogers, G.A.P.H. van den Eertwegh. 2015. De toegevoegde waarde van hoge-resolutie neerslagradar voor het waterbeheer. Case-study binnen het “Daring Applications & Innovations in Sensor Systems” (DAISY) project. FutureWater rapport 135.

Terink, W., A.F. Lutz, W.W. Immerzeel. 2014. SPHY v2.0: Spatial Processes in Hydrology. Model theory and SPHY interface (v1.0) manual. FutureWater Report 131.

Droogers, P., **W. Terink**. 2014. Water Allocation Planning in Pungwe Basin Mozambique. FutureWater Report 129.

Terink, W., P. Droogers. 2014. Hydrological analysis and modelling of the Pungwe River Basin, Mozambique. A study performed under the 'Water Planning Tools to Support Water Governance' (WatPlaG) project. FutureWater report 126.

Terink, W., Droogers, P. 2014. Bodemvochtgegevens ter ondersteuning van leverbot analyses. FutureWater rapport 124.

Lutz, A., **Terink, W.**, Droogers, P., Immerzeel, W.W. 2014. Development of baseline climate data set and trend analysis in the Mekong Basin. Appendices. Prepared by FutureWater for Mekong River Commission (MRC) Climate Change and Adaptation Initiative (CCAI). Version 14. Feb-2014.

Lutz, A., **Terink, W.**, Droogers, P., Immerzeel, W.W., Piman, T. 2014. Development of baseline climate data set and trend analysis in the Mekong Basin. Prepared by FutureWater for Mekong River Commission (MRC) Climate Change and Adaptation Initiative (CCAI). Version 14. Feb-2014.

Terink, W., van den Eertwegh, G.A.P.H., Sassi, M., Leijnse, H., Uijlenhoet, R. 2013. The hydrological effects of using high- vs. coarse-resolution rainfall products in a small Dutch lowland catchment. Poster presentation at the 11th International Precipitation Conference 2013, Ede, The Netherlands.

Droogers, P., **W. Terink**. 2012. SPHY (Spatial Processes in HYdrology) toepassing Hupselse Beek. FutureWater rapport 124.

Simons, G., **W. Terink**, H. Badawy, G.A.P.H. van den Eertwegh, W.G.M. Bastiaanssen. 2012. Egypt: Assessing the Effects of Farm-Level Irrigation Modernization on Water Availability and Crop Yields. Final Report (Summer 2011 and Winter 2011/2012).

Terink, W., J. van Bakel, G.A.P.H. van den Eertwegh, P. Droogers. 2013. KlimaatAdaptieve Drainage: een innovatieve methode om piekafvoeren en watertekorten te verminderen. Eindrapportage Werkpakket 2: Rekenmodules (SWAP). FutureWater rapport 117.

Terink, W., P. Droogers, J. van Dam, G. Simons, M. Voogt. 2012. The added value of high-resolution above coarse-resolution remote sensing images in crop yield forecasting: a case study in the Egyptian Nile Delta. FutureWater report 116.

Terink, W., J. van Leuken, P. Droogers, A. Swart, W. van der Hoek. 2012. “Spatial Processes in HYdrology” (SPHY) – Bodemvocht bepaling ter ondersteuning van analyse Q-koorts transmissie risico. FutureWater rapport 122.

Droogers, P., W.W. Immerzeel, **W. Terink**, J. Hunink, G. van Lynden. 2012. Water Allocation in 2050: Tools and Examples. Proceedings to Conference: Water Allocation and Green Growth, Wageningen, Nov-2012.

Terink, W., G.A.P.H. van den Eertwegh, P. Droogers. 2012. Model voor landsdekkende berekening bodemvocht in wortelzone en actuele verdamping. H2O, 23: 16-18.

Terink, W., P. Droogers, W.W. Immerzeel, G. van den Eertwegh. 2012. SPHY – Een hydrologisch model gericht op de berekening van bodemvocht en de actuele verdamping. FutureWater rapport 115.

Droogers, P., **W. Terink**, J. Brandsma, W.W. Immerzeel. 2011. Assessment of the Irrigation Potential in Burundi, Eastern DRC, Kenya, Rwanda, Southern Sudan, Tanzania and Uganda. Final Report. FutureWater Report 114.

Droogers, P., **W. Terink**, J. Brandsma, W.W. Immerzeel. 2011. Assessment of the Irrigation Potential in Burundi, Eastern DRC, Kenya, Rwanda, Southern Sudan, Tanzania and Uganda. Final Report Appendix Burundi. FutureWater Report 114.

Droogers, P., **W. Terink**, J. Brandsma, W.W. Immerzeel. 2011. Assessment of the Irrigation Potential in Burundi, Eastern DRC, Kenya, Rwanda, Southern Sudan, Tanzania and Uganda. Final Report Appendix DR Congo. FutureWater Report 114.

Droogers, P., **W. Terink**, J. Brandsma, W.W. Immerzeel. 2011. Assessment of the Irrigation Potential in Burundi, Eastern DRC, Kenya, Rwanda, Southern Sudan, Tanzania and Uganda. Final Report Appendix Kenya. FutureWater Report 114.

Droogers, P., **W. Terink**, J. Brandsma, W.W. Immerzeel. 2011. Assessment of the Irrigation Potential in Burundi, Eastern DRC, Kenya, Rwanda, Southern Sudan, Tanzania and Uganda. Final Report Appendix Rwanda. FutureWater Report 114.

Droogers, P., **W. Terink**, J. Brandsma, W.W. Immerzeel. 2011. Assessment of the Irrigation Potential in Burundi, Eastern DRC, Kenya, Rwanda, Southern Sudan, Tanzania and Uganda. Final Report Appendix South Sudan. FutureWater Report 114.

Droogers, P., **W. Terink**, J. Brandsma, W.W. Immerzeel. 2011. Assessment of the Irrigation Potential in Burundi, Eastern DRC, Kenya, Rwanda, Southern Sudan, Tanzania and Uganda. Final Report Appendix Tanzania. FutureWater Report 114.

Droogers, P., **W. Terink**, J. Brandsma, W.W. Immerzeel. 2011. Assessment of the Irrigation Potential in Burundi, Eastern DRC, Kenya, Rwanda, Southern Sudan, Tanzania and Uganda. Final Report Appendix Uganda. FutureWater Report 114.

Terink, W., W.W. Immerzeel, P. Droogers. 2011. Drought Monitoring and Impact Assessment in the Mekong River Basin. FutureWater Report 104.

Droogers, P., **W. Terink**, J. Brandsma, W.W. Immerzeel. 2011. Assessment of the Irrigation Potential in Burundi, Eastern DRC, Kenya, Rwanda, Southern Sudan, Tanzania and Uganda. Report Phase 1. FutureWater Report 103.

Droogers, P., **W. Terink**, J. Hunink, S. Kauffman, G. van Lynden. 2011. Water Use and Demand in the Sebou Basin, Morocco – A Benefit-Cost Analysis using the Water and Evaluation and Planning Tool (WEAP). Green Water Credits Morocco: Inception Phase. FutureWater Report 102.

Terink, W., J. Hunink, P. Droogers, H. Reuter, G. van Lynden, S. Kauffman. 2011. Green and Blue Water Resources for the Sebou Basin, Morocco- Soil-Water Management Scenarios using the Soil and Water Assessment Tool (SWAT). Green Water Credits Morocco: Inception Phase. FutureWater Report 101.

Droogers, P., **W. Terink**, J. Brandsma, W.W. Immerzeel. 2011. Assessment of the Irrigation Potential in Burundi, Eastern DRC, Kenya, Rwanda, Southern Sudan, Tanzania and Uganda. Inception Report. FutureWater Report 100.

Hunink, J., **W. Terink**, P. Droogers, H. Reuter, J. Huting. 2011. Towards a Proof-of-Concept of Green Water Credits for the Sebou Basin, Morocco. FutureWater Report 99.

Immerzeel, W. W., P. Droogers, **W. Terink**, J. Hoogeveen, P. Hellegers, M. Bierkens, R. van Beek. 2011. Middle-East and Northern Africa Water Outlook. World Bank Study. FutureWater Report 98.

Terink, W., P. Droogers. 2011. Berekening van de rivierwaterstanden rond 2050 als gevolg van klimaatverandering onder het W+ scenario. Hoogheemraadschap Stichtse Rijnlanden.

Droogers, P., **W. Terink** en J. van Bakel. 2010 Klimaatadaptieve Drainage: Een innovatieve methode om piekafvoeren en watertekorten te verminderen. FutureWater Report 96.

Droogers, P., **W. Terink** en J. van Bakel. 2010. Klimaatadaptieve Drainage: Een innovatieve methode om piekafvoeren en watertekorten te verminderen. Bijlagen bij Eindrapportage Haalbaarheidsonderzoek. FutureWater Report 95.

W. Terink, R.W.T.L. Hurkmans, R. Uijlenhoet. 2009. Estimation of Water Balance Uncertainties based on Climate Ensembles - Application of the Variable Infiltration Capacity model in combination with climate scenarios to the Rhine basin. (NeWater deliverable 2.2.5)

Terink, W., Hurkmans, R.T.W.L., Uijlenhoet, R., Warmerdam, P.M.M., Torfs, P.J.J.F. (2008). Bias correction of temperature and precipitation data for regional climate model application to the Rhine basin (Report of the Hydrology and Quantitative Water Management Group of Wageningen University, Wageningen, The Netherlands).

R.T.W.L. Hurkmans, **W. Terink**, R. Uijlenhoet. 2008. Prototype of a Catchment Scale Hydrological Model and Climate Scenarios - Application of the Variable Infiltration Capacity model to the Rhine basin. (NeWater deliverable 2.2.4).

Selection of assignments and projects

2020-2021	Climate Change Projections for Canterbury – Writing a high-level report about the impacts of climate change on the water resources in Canterbury. My role was to write the chapters related to the impacts on surface water, and in particular the alpine catchments.
2018-2020	Rakaia Water Balance Model study – The aim of this study was to understand the river's natural flow regime and interaction with its water users. This project involved the development of a spatially distributed rainfall runoff model (SPHY) to evaluate the natural water resources upstream of Fighting Hill, and the development of a water allocation model (WEAP) to study the interaction between the consent holders and the river.
2019	Calculating flood statistics for the Rangitata December 2019 flood
2019	Hakatere/Ashburton River Modelling for Consent Review – For the Haketere/Ashburton River Zone consents review process, the consent holders wanted to know how this review will impact the availability of water for irrigation. This study involved the development of a hydrological model that includes river flow, minimum flow conditions, and water abstraction data. My role was to develop a tool that was able to naturalise river flows for each of the minimum flow sites.
2016-2017	Hydropower development assessment for the Tamakoshi River Basin – The objective it to improve the understanding of the expected impacts of climate change on water availability in the context of potential hydropower development in the Tamakoshi River Basin. This project involves selection and statistical downscaling of GCMs, hydrological model calibration, improving SPHY model concepts focusing on glacier dynamics, and WEAP scenarios for hydropower development.
2016	AGU Fall Meeting 2016, San Francisco – Oral presentation H54A: Advances in Process-Based Hydrologic Modeling III - Improvement of the SPHY Model Glacier Module and its Application in the Tamakoshi River Basin, Nepal.
2016	NUFFIC Tailor-Made Training (SPHY modeling) – ARA-Sul and ARA-Norte in Mozambique faced a knowledge gap to adequately manage their water resources and to serve their clients. This training aims to equip these ARAs with additional knowledge to work with the SPHY model as a Water Resources Model.
2015-2016	Development of "integrated Quantative Water System Analysis Tool" (i-QWAT) – A conceptual based model was developed in Excel to simulate fluxes of both water quantity and quality (Chloride, Nitrogen, and Phosphor) in the soil profile and channel. Quantities can be evaluated for different pathways, being surface runoff, interception, evapotranspiration, infiltration, drainage, seepage, and water extraction.

2015	Training for 23 water specialists from India, Nepal, Pakistan, and ICIMOD staff focusing on using the SPHY model and pre-processor GUIs for the Hindu-Kush Himalayan (HKH) region. The training aimed to implement the model in the HKH region to better understand the glacio-hydrological behavior, water availability and impacts of climate change.
2015	Development of a SPHY model pre-processor Graphical User Interface (GUI) - The SPHY model requires a vast number of input maps. Less experienced SPHY model users faced some difficulties in i) finding the appropriate data source, and ii) creating the SPHY model input format based on these data sources. A SPHY model pre-processor GUI was developed as plugin in QGIS. This allows less experienced users to create SPHY model input data based on a pre-defined database. The development of this GUI was partly funded by ICIMOD, Nepal.
2015	NUFFIC Tailor-Made Training (SPHY and WEAP modeling) – The ARAs in Mozambique faced a knowledge gap to adequately manage their water resources and to serve their clients. This training aims to equip the ARAs with additional knowledge to work with Water Resources and Allocation Models in order to have a stronger advisory role towards policy and decision makers, and people living in their management area.
2015	SPHY model training to 30 water professionals from a variety of Vietnamese organizations, including government departments and research institutes. The training covered modelling concepts of the SPHY model and hands-on training in setting up and running the model for a sub-basin within the Red River Basin, Vietnam. The training was organized in the framework of the NUFFIC NICHE project *"*Improvement of higher education in water management in view of climatic change in Vietnam"*.*
2015	Development of a sediment module for the SPHY model - A project in Tanzania, funded by the "The Nature Conservancy" (TNC), aimed at evaluating erosion-prone areas. SPHY 2.1 did not include the simulation of sediment yield, and therefore a sediment module was developed to be implemented in the SPHY model. This module is based on the Universal Soil Loss Equation (USLE).
2015	Development of a reservoir module for the Spatial Processes in HYdrology (SPHY) model - With the objective to simulate reservoir inflow and outflow for several reservoirs in the Red River Basin, a reservoir module was needed to be implemented in SPHY 2.0. The developed reservoir module allows the user to choose between a "simple" and "advanced" reservoir scheme. The simple reservoir scheme is used whenever data on reservoir management is lacking, whereas the advanced reservoir scheme uses a target release that can be specified for different seasons throughout the year. The reservoir module was implemented in SPHY 2.1.
2014-2015	Development of a Graphical User Interface (GUI) for the Spatial Processes in Hydrology (SPHY) model - In order to make the SPHY model more user-friendly, and therefore more applicable to a broader audience world-wide, FutureWater started developing a GUI for the SPHY model. The development of this GUI was done using a combination of Python and QGIS, resulting in a GUI that can be used as plugin in the open source Geographic Information System QGIS. Since QGIS is free available, anyone can download it and use it in combination with the SPHY model plugin without any restrictions. The development of SPHY model GUI was partly funded by ICIMOD, Nepal.

2014-2015	OWASIS-UK: Observatory of Water Availability – System of Integrated Services. To study and investigate the feasibility of new integrated services based on space-based and terrestrial innovative technologies to improve the monitoring of water availability, quality and distribution. FutureWater investigated the feasibility of using UAVs for moorland restoration, and using the SPHY model in operational mode to forecast near saturated conditions in order to detect surface runoff of agricultural waste (Metaldehyde).This project was funded by ESA.
2014	Soil moisture data to minimize the risk of distribution of the “Leverbot” (*Fasciola hepatica*) disease: The “Gezondheidsdienst voor Dieren (GD)” (Healthcare organization for animals) has been conducting research on the correlation between the distribution of “Leverbot” and environmental indicators, such as soils, vegetation, etc. The GD was also interested in analyzing the correlation between “Leverbot” distribution and soil wetness (soil moisture). Therefore, FutureWater provided for the period January 2001 through August 2014, on a monthly basis, soil moisture maps for the Netherlands. Results were provided as monthly maps (250 x 250 m resolution), as well as in tables, showing averages per 4-digit postcode.
2013-2014	Development of the Spatial Processes in Hydrology (SPHY) model: Regarding the broad range of water-related questions world-wide, there seemed to be a need for a hydrological model that i) integrates the most relevant hydrological processes, ii) is setup modular in order to switch on/off irrelevant processes, iii) is easy adjustable and applicable, iv) can easily be linked to remotely sensed data, and v) can be applied for operational as well as strategic decision support. Based on these criteria, FutureWater developed its in-house spatially distributed hydrological model SPHY, which is written in the Python programming language using the PCRaster dynamic modelling framework.
2013-2014	Water Planning Tools to Support Water Governance: The objective of this project is to demonstrate the Dutch Water Governance system to one water management organization (ARA) in Mozambique. The activities in this project are to assist ARA-Centro staff in building/developing water availability models and water allocation models for decision making. This project was partly funded by the Dutch Government.
2013-2014	INTOGENER demo (Integration of EO data and GNSS-R signals for ENERgy applications). This project aims to develop an operational flow forecasting system for two pilot catchments with hydropower facilities in Chile. This project integrates in-situ data, remote sensing data (snow cover), and ECMWF climate forecasts.
2013-2014	DAISY: Daring Applications & Innovations in Sensor Systems. The aim of this project is to develop a compact and mobile radar system that can be used for several applications. This project is in collaboration with the Hydrology and Quantitative Water Management group of Wageningen University and Thales, in which the latter has the project lead. FutureWater’s role in this project is to evaluate the added value of having a high spatial and temporal resolution rainfall product for hydrological applications.
2013-2015	Q-fever and its relation with physical environmental factors. This project aims to evaluate if a certain relation exists between Q-fever infections and environmental factors such as land-use, soil type, and soil moisture. This project is led and in collaboration with RIVM. The role of FutureWater in this project is to develop an operational service that provides on a weekly basis,

	daily values for soil moisture and vegetation indices for the entire Netherlands on a gridded basis.
2012	High-resolution versus coarse-resolution remote sensing images in crop yield forecasting. This project aims to evaluate the added value of high- vs. coarse-resolution satellite imagery in crop yield forecasting. This study uses high- and coarse-resolution remotely sensed LAIs to drive the SWAP model in order to simulate crop yields for multiple crops within one remote sensing pixel.
2012	Climate Adaptive Drainage: Research and Development. This project is financed by the Dutch Ministry and focuses on Small Business and Innovative Research (SBIR). This project aims at developing an innovative drainage system, which prevents peak flows during periods of rainfall excess as a result of climate change. The innovative drainage system can be remotely controlled and can also be used by the farmer in order to infiltrate water during periods of water shortage.
2012	Impact of irrigation modernization on the water balance in the Western part of the Nile Delta in Egypt. The SWAP model is used to evaluate the impact of irrigation modernization on consumptive use, canal seepage losses, drainage water, salinity levels, and crop yields. This project was performed in collaboration with WaterWatch and was commissioned by the World Bank.
2011	Drought Monitoring and Impact Assessment Toolbox for Vietnam. Demonstration of 'Early Deliverable' for Vietnam. A Drought Monitoring product to support drought policy in Vietnam. This tool contributes to a better understanding of past and current droughts, and how to act upon droughts which will intensify in the future. This project was performed in collaboration with the Netherlands Space Office (NSO), Netherlands Water Partnership (NWP), and Partners for Water.
2011	Drought Monitoring and Impact Assessment in the Mekong River Basin. A framework to monitor historical and present droughts, in order to evaluate the drought risk in a certain area.
2011	Hydrological assessment of the irrigation potential in seven countries (Burundi, Eastern DRC, Kenya, Rwanda, Southern Sudan, Tanzania, and Uganda) in the Nile basin. This assignment is performed for the Nile Basin Initiative (NBI).
2011	Green Water Credits for the Sebou basin in Morocco: Inception Phase. Quantification of the potential benefits of implementing Green Water Credits measures in the Sebou basin in Morocco. Identified potential benefits were reduction of evaporation, soil erosion, sedimentation of reservoirs, and the increase of transpiration. This project was performed in collaboration with ISRIC – World Soil Information.
2010	Adaptive strategies for water management in the southeastern part of the Netherlands under a changing climate (Deltaplan Hoge Zandgronden
2010	SBIR: Climate adaptive drainage. A new method to reduce high discharges and water shortages.
2007-2010	Researcher in the EU FP7 project ACER: Adaptations to extreme events in transboundary river basins. Developing adaptive strategies for the Rhine river basin under a changing climate.
2007-2008	Researcher in NeWater Integrated Project in the 6th EU framework programme: Estimation of Water Balance Uncertainties based on Climate Ensembles - Application of the Variable Infiltration Capacity model in combination with climate scenarios to the Rhine basin.

Overseas professional experience

Burundi, Mozambique, Morocco, Nepal, Netherlands, Portugal, Spain, U.S., Vietnam