

Curriculum Vitae

Name G.W.H. Simons, MSc.
 First Name Gijs
 Date of Birth January 17, 1986
 Nationality Dutch
 Main Disciplines Water Resources Management, Hydrological Modelling,
 Remote Sensing, Climate Change, GIS
 Telephone: +31 (0)6 15212058
 Email: g.simons@futurewater.nl
 LinkedIn: <https://nl.linkedin.com/in/gijssimons>



Key Qualifications

Gijs Simons is a hydrologist and remote sensing expert with over ten years of experience in managing and executing international projects in the field of water resources management. Countries of work experience include Cambodia, Egypt, Ethiopia, Lao PDR, Madagascar, Mali, Morocco, Mozambique, Myanmar, Nepal, The Netherlands, Philippines, Romania, Spain, Sudan, Uganda, and Vietnam. Gijs has advanced skills in hydrological modelling, satellite image interpretation and GIS analysis using a variety of tools (e.g. SPHY, SWAT, WEAP, InVEST, ArcGIS, QGIS, PCRaster, Python, R, Google Earth Engine) on the full range of spatial scales from a single agricultural field to an entire river basin. Gijs is the lead author and co-author of many publications, both peer-reviewed papers and technical reports. In addition, he has developed and conducted multiple training courses and workshops on remote sensing, GIS and hydrological modelling.

Gijs is currently the managing director of the FutureWater office in Wageningen, as well as a PhD researcher at Delft University of Technology focusing on water (re)use across a river basin on different spatial scales.

Educational Background

2013 – ongoing PhD: Tracking water reuse in river basins with multiple users, Delft University of Technology, Delft, The Netherlands
 2007 – 2009 MSc Hydrology, Utrecht University, Utrecht, The Netherlands
 2004 – 2007 BSc Earth Sciences with a specialization in Physical Geography, Utrecht University, Utrecht, The Netherlands

Professional Experience

2014 – present Hydrologist and Managing Director, FutureWater, Wageningen, The Netherlands
 2010 – 2014 Hydrologist and Remote Sensing Specialist, WaterWatch BV / eLEAF Competence Center, Wageningen, The Netherlands
 2010 Hydrogeologist, IF Technology, Arnhem, The Netherlands

Overseas Professional Experience

Resident: FutureWater Mekong office, Vientiane, Lao PDR (2018).
 Resident (visiting researcher): Thuy Loi University, Hanoi, Vietnam. Hydrological modelling of the Red River Basin in China and Vietnam (March - July 2015).
 Non-resident assignments: Cambodia, Egypt, Ethiopia, Madagascar, Mali, Morocco, Mozambique, Myanmar, Nepal, Oman, Romania, Spain, Sudan, Uganda, Vietnam.

Selection of Assignments and Projects

<p>Duration: 2020-2022 Position: Integrated Catchment Management Expert Location: Philippines Client: Wetlands International</p>	<p><i>Integrated Catchment Management in Cagayan de Oro River Basin, Mindanao</i> Main Project Features: The Ridge to Coast, Rain to Tap: Sustainable Water Supply Project (“R2CR2T”) is an integrated approach to addressing flooding and soil erosion in the Cagayan de Oro River basin on Mindanao in the Philippines. FutureWater is supporting the development of an operational Decision Support Tool to analyze scenarios related to reforestation and landscape restoration campaigns in the catchment, which are aimed at mitigating land degradation, downstream flood risk, and enhancing water availability in the dry season. Activities Performed:</p> <ul style="list-style-type: none"> • Supporting development and application of hydrological model and Decision Support Tool for Sustainable Land Management • Reviewing project outputs
<p>Duration: 2020 Position: Hydrologist / remote sensing expert Location: Cambodia Client: GIZ</p>	<p><i>Transboundary water management between Thailand and Cambodia as part of the adaptation of the agricultural sector in North-Western Cambodia to climate change</i> Main Project Features: This project takes an integrated approach to support the development of a water resource management plan for a transboundary rural region in Northwestern Cambodia / Thailand. The project involves extensive data collection and analysis related to agriculture, floods and droughts, and socio-economics, as well as scenario simulations using the Water Evaluation And Planning (WEAP) tool. These simulations serve to evaluate water resources availability and unmet demands (water shortages), under different water management strategies and climate change scenarios. Activities Performed:</p> <ul style="list-style-type: none"> • Google Earth Engine-based drought risk mapping • Water resources modelling
<p>Duration: 2020 Position: International consultant / team leader Location: Inle Lake, Myanmar Client: UNDP</p>	<p><i>Boundary Demarcation and Ecosystem Services Mapping of Inle Lake Region</i> Main Project Features: The assignment supports the newly established Inle Lake Management Authority (ILMA) by developing up-to-date, spatial datasets, which are to be included in the ILMA geodatabase. More specifically, the existing Inle Lake MAB boundary and zoning are confirmed and updated. Maps of land-use and different ecosystem services are produced and validated in close consultation with stakeholders. In addition, the development of communications and educational materials is supported, and key government staff is trained on ecosystem services mapping. Activities Performed:</p> <ul style="list-style-type: none"> • Spatial data analysis / satellite data interpretation • Ecosystem services mapping • Capacity building • Project management
<p>Duration: 2019 Position: Team leader Location: Myanmar Client: Yangon Technological University / Nuffic</p>	<p><i>Advanced cloud computing for water resources management in Myanmar</i> Main Project Features: A 3-month course consisting of three training weeks and a period of remote support, focusing on hands-on training of university staff and government officials in the use of Google Earth Engine for water resources analyses. Activities Performed:</p> <ul style="list-style-type: none"> • Development of training material • Project coordination
<p>Duration: 2019 Position: Hydrologist Location: Cambodia Client: Asian Development Bank</p>	<p><i>Rapid assessments on the status of water resources and eco-hydrological environments for the Tonle Sap and Mekong Delta River Basin Groups and river basin surface water resource assessments</i> Main Project Features: The project enhances capacity for sustainable water resources management and strengthens capacity of the Ministry of Water Resources and Meteorology (MOWRAM) to manage and deliver irrigation services by performing (i) a rapid water resources assessment of the Tonle Sap and the Mekong Delta river basin groups; (ii) an ecological assessment of these two river basin groups to identify areas for development and conservation; (iii) detailed surface water resources assessments for five river basins within these groups.</p>

	<p>Activities Performed:</p> <ul style="list-style-type: none"> • Collection and reviewing of relevant hydrological data and literature • Cooperation with the national and international modelling team to set up and run simulation models on hydrology and water allocation (WEAP) for Cambodian river basins • Scenario analyses and proposition of effective strategies for river basin management and irrigation development
<p>Duration: 2019 Position: Trainer in hydrological modelling and remote sensing Location: Pokhara, Nepal Client: Institute of Forestry (IOF) / Nuffic</p>	<p>Use of open-source platforms for hydrological modelling of data-scarce regions in Nepal</p> <p>Main Project Features: This three-week training is organized to build capacity at the IOF and other Nepali government departments in the use of publicly available remote sensing platforms (Google Earth Engine) and open-source hydrological modelling tools.</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> • Preparing training material and tutorials (land cover classification, water balance analyses, hydrological modelling) • Executing training and supervising participants
<p>Duration: 2019 Position: Hydrology expert Location: Mandalay, Myanmar Client: Netherlands Commission for Environmental Assessment</p>	<p>Review of ESIA Pyigyitagon Water Supply Project, Myanmar</p> <p>Main Project Features: The proposed Pyigyitagon Water Supply Project will cater for approximately 170,000 people and various businesses and industries in Pyigyitagon township, Mandalay. An Environmental and Social Impact Assessment of the development of the infrastructure and operation of the project was performed. This assignment includes the review of this ESIA in terms of hydrological aspects and advisory to the NCEA.</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> • Reviewing hydrological aspects of the ESIA • Reporting and advice to the NCEA
<p>Duration: 2017 - 2020 Position: Hydrology and erosion modeler, trainer Location: Madagascar Client: World Bank</p>	<p>Land use planning for enhanced resilience of landscapes (LAUREL) Madagascar</p> <p>Main Project Features: The result of this consultancy assignment is a prototype land use change simulation platform to be used by the government of Madagascar to characterize how land use is likely to evolve and assess the consequences of alternatives on the achievement of development objectives and environmental objectives. Key output variables include land use changes, forested area, carbon storage, river discharge, soil erosion rate, crop production and associated nutritional coverage and agricultural income. The platform is demonstrated for some of the country's land degradation hotspots.</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> • Hydrological and erosion modelling • Assessing impacts of climate change and land management scenarios • Providing training in hydrological modelling to staff of relevant government departments
<p>Duration: 2018 - 2019 Position: Project manager and agro-hydrologist Location: Mashhad, Iran Client: Partners for Water, Netherlands Government</p>	<p>SMART-WADI (SMART WATER Decisions for Iran)</p> <p>Main Project Features: This project targets irrigators and aims at delivering them a solution providing up-to-date information on water productivity and near-real time advice on their irrigation and farm water application. The solution combines the latest technology on water productivity mapping based on high-resolution satellite imagery for measuring consumptive water use, with ultra-resolution imagery from drones to assess crop performance. By incorporating this information in semi-real time in a crop water productivity model, yield gaps can be analyzed and the scope for enhancing agricultural practices can be assessed.</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> • Overall project management • Water productivity assessment based on satellite images, drones and a simulation model
<p>Duration: 2018 Position: Hydrologist and remote sensing expert</p>	<p>The business case for investing in catchment conservation: case studies Nyamindi River Catchment, Kenya and Kiwira River Catchment, Tanzania</p> <p>Main Project Features: The assignment looks to apply a business case analysis methodology to small hydropower investments. In general, during the development and operations of hydropower facilities the benefits stemming from sale of electricity</p>

<p>Location: Kiwira Catchment (Tanzania), Nyamindi Catchment (Kenya) Client: IWaSP / GIZ</p>	<p>rarely benefits the communities living within the catchment or support the protection of the catchment in which the hydropower development sits. This can lead to unsustainable management of resources and increases the risks faced by the catchment communities, the facility and its investors. To substantiate the business case for investment in catchment conservation, hydropower potential of small hydropower projects is evaluated under different future scenarios related to SLM interventions, land degradation, climate change and water demand.</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> • Remote sensing analysis of trends in land use change and land degradation • Hydrological modelling of SLM, climate change and water demand scenarios • Interpretation of results and Cost-Benefit Analyses (CBA)
<p>Duration: 2018 Position: Project leader Location: Ghana Client: RVO, Netherlands government</p>	<p><i>Enhancing irrigation water productivity and yields of pineapple farmers in Ghana</i> Main Project Features: Study to determine the technical and economic feasibility of the development of an extension service for Ghanaian semi-commercial farmers based on flying sensor (drone) technology, crop models, and locally embedded data sharing and farmer advisory infrastructure.</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> • Overall project coordination • Quality control of project output
<p>Duration: 2018 Position: Water Resources Information Expert Location: Cambodia Client: Asian Development Bank</p>	<p><i>Preparation of tender documents for setting up a National Water Resources Information System in Cambodia based on Water Accounting Plus</i> Main Project Features: The foreseen IAIP project of ADB has two outputs: (i) efficiency and climate resilience of irrigation systems enhanced; and (ii) water resources management improved. Under the second output, the project will develop a water resources information system (WRIS) as a common platform for country-wide data of river flows and rainfall. The WRIS will be based on the Water Accounting Plus framework and will be housed in national water data management center that will be established by the project. Under this assignment, assistance was provided to MOWRAM to develop the terms of reference for the WRIS, including its establishment and operation.</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> • Writing ToR documents for the implementation of the WRIS, including a capacity building program on WA+ and remote sensing • Cost estimation of required consultancy inputs
<p>Duration: 2018 Position: Hydrologist and GIS expert Location: Upper Mekong Region (Myanmar, China) Client: Mekong River Commission</p>	<p><i>Preparation of the Upper Mekong chapters of the Mekong River state of the basin report 2018</i> Main Project Features: The Mekong State Of the Basin Report (SOBR) is published by the MRC every five years. It provides information on the status and trends of water and related resources in the Mekong Basin, from an economic, social and environmental perspective. The geographical scope of the 2018 Mekong SOBR is extended to include the Upper Mekong Basin in Yunnan (China) and Myanmar.</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> • Literature review • Analysis of remotely sensed and other geospatial data • Liaison with MRC and relevant stakeholders in Myanmar and China • Preparation of high-quality figures, graphs and texts
<p>Duration: 2017 - 2018 Position: Project manager, hydrology and remote sensing expert Location: Huambo, Angola Client: RVO, Netherlands government</p>	<p><i>Remote sensing for land suitability assessment in Angola</i> Main Project Features: This project demonstrates the potential of remote sensing to Angolan stakeholders by (i) producing trend analyses of agricultural land use and cropping seasons, (ii) mapping agro-ecological land suitability for specific crops, and (iii) evaluating irrigation potential spatially across Huambo Province. Local counterparts are the University of Huambo and the Provincial Agricultural Department.</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> • Project management • Mapping of agro-ecological land suitability • Integration of remote sensing and a hydrological model for examining irrigation potential

<p>Duration: 2017 - 2018 Position: Hydrologist and trainer Location: Myanmar Client: Partners for Water, Netherlands government</p>	<p><i>Leapfrogging delta management: showcase operational rainfall monitoring</i> Main Project Features: In response to the request of the NWRC in Myanmar, the interest of Dutch innovative enterprises, and the large investments which take place in Myanmar by international organizations, the main aim is to test and demonstrate innovative smart information solutions in the Delta and disseminate the results widely. One of these solutions is an operational rainfall mapping methodology that provides crucial inputs for flood forecasting and hydrological modelling applications. Activities Performed:</p> <ul style="list-style-type: none"> • Data analysis and downscaling of satellite-derived rainfall maps • Capacity building of Myanmar counterparts (NWRC, YTU, DMH) on topics related to hydrology and water management
<p>Duration: 2017 Position: Hydrologist and remote sensing expert Location: Mozambique Client: ADVZ / HUB Lda, Mozambique</p>	<p><i>Water productivity assessment for the APROVALE project</i> Main Project Features: Project APROVALE (“Productive Water in the Zambezi Valley”) is funded by the Dutch Ministry of Foreign Affairs and led by the Agency for Development in Zambesia (ADVZ). The project aims to strengthen the agricultural practices of local small commercial producers in the Zambezi Valley in order to combat climate change and ensure food security. Quantification of water productivity is essential for reporting on baseline conditions and monitoring future impact of the project Activities Performed:</p> <ul style="list-style-type: none"> • Data analyses (collected in-field, remotely sensed, GIS) • Agro-hydrological modelling for quantification of Water Productivity
<p>Duration: 2017 Position: Course coordinator, lecturer Location: The Netherlands Client: Utrecht University</p>	<p><i>Leading BSc. course Earth Observation and Data Analysis</i> Main Project Features: The 10-week course of Earth Observation and Data Analysis is part of the curriculum of second-year BSc. Students of Utrecht University. It consists of weekly lectures and practicals covering the theoretical and practical fundamentals of remote sensing and processing of geospatial data. Activities Performed:</p> <ul style="list-style-type: none"> • Coordination and organization of the course • Preparation of educational material • Providing lectures and supervising practicals
<p>Duration: 2016 - 2017 Position: Hydrological modeler Location: The Netherlands Client: RVO, Netherlands government</p>	<p><i>Smart coupling of models for improved estimation of actual evapotranspiration</i> Main Project Features: Development of a methodology for automatic coupling of a hydrological model of The Netherlands to a surface energy-based evapotranspiration model, in order to improve the estimations of actual ET for regional water managers during clouded conditions Activities Performed:</p> <ul style="list-style-type: none"> • Hydrological modelling and forecasting • Project management
<p>Duration: 2016 - 2017 Position: Hydrological modeler Location: Spain Client: European Commission</p>	<p><i>Improving prediction of hydrological extremes (IMPRES)</i> Main Project Features: The IMPRES project is designed to support the reduction of Europe’s vulnerability to extreme hydrological events through improved understanding of the intensity and frequency of future disrupting features that may be very different from today’s reality. The goal is to substantially improve our forecasting capability of hydrological extremes and their impacts at short to seasonal time scales. Activities Performed:</p> <ul style="list-style-type: none"> • Water accounting and remote sensing analysis • Hydrological modelling of Segura and Upper Tagus River Basins • Seasonal forecasting of reservoir inflows • Statistical analyses of model parameter sensitivity and forecasting uncertainties • Impact assessments of climate change scenarios
<p>Duration: 2016 Position: Hydrological modeler Location: Kenya Client: IWMI</p>	<p><i>Impacts of climate change and sustainable land management investments on water and sediment flows in the Upper Tana basin</i> Main Project Features: The objective is to evaluate the impacts of climate change on investments in sustainable water and land management in the Upper Tana. More specifically, the analysis provides insight in how climate change can influence the biophysical effectiveness of different land management options in the Upper Tana, focusing on flows and sediments that influence downstream relying services,</p>

	<p>mainly hydropower.</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> Hydrological modelling of different climate change and investment scenarios and assessment of their impacts (SWAT) Co-authoring IWMI research report
<p>Duration: 2016 Position: Hydrological modeler Location: Zambia Client: The Nature Conservancy</p>	<p><i>Hydrological evaluation and ecosystem valuation of the Lukanga swamps</i></p> <p>Main Project Features: The Lukanga Swamp likely plays an important role in the hydrology of the Kafue River Basin, Zambia, in terms of both water quantity and quality. To better understand the Lukanga hydrological system and the ecosystem services that are provided, remote sensing and simulation models are combined to assess the main water fluxes, erosion, sediment loads, and flooding characteristics (extent, duration and number of floods).</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> Hydrological modelling (SWAT) Water balance analyses
<p>Duration: 2016 Position: Project manager and remote sensing expert Location: The Netherlands Client: STOWA, Dutch water boards</p>	<p><i>Survey of existing remote sensing-based information products for water managers</i></p> <p>Main Project Features: STOWA and the Dutch water boards are interested to fully exploit the potential of information products derived from remote sensing. To this end, they require an elaborate database of all products currently on the market that could benefit water managers. The aim of this project is to create a database of all relevant technical properties of the existing products, including estimates of their technology readiness levels and market readiness levels.</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> Creating a database of available remote sensing products, based on surveys, interviews and expert knowledge Providing expert opinion on specific properties of these products Writing publications
<p>Duration: 2016 Position: Remote sensing expert and project leader Location: The Netherlands Client: Institute for Physical Safety, The Netherlands</p>	<p><i>Satellite information for wildfire management</i></p> <p>Main Project Features: The occurrence of wildfires and their behavior in The Netherlands is simulated by a spatial model incorporating several environmental properties. However, the spatially distributed input information is currently not dynamic, has low reliability and does not comply with the definitions of fuel classes. Within this project, an operational service is developed and evaluated that consists of several data layers related to vegetation type, density and moisture content, with the aim to enable a more accurate prediction of wildfire behavior.</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> Vegetation classification Satellite image analysis Project coordination
<p>Duration: 2015 - 2016 Position: Hydrological modeler Location: Vietnam, China, Lao PDR Client: CGIAR Water Land and Ecosystems Program, Greater Mekong</p>	<p><i>Inclusive development paths for healthy Red River landscapes based on ecosystem services</i></p> <p>Main Project Features: The project develops equitable and economically viable pathways for the land and water resources of the Red River Basin that maximize social and environmental benefits. The project develops these pathways through multilevel stakeholder dialogues, using scenario thinking, and supports this process with the development of tools and frameworks for governing water and land, including Water Accounting.</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> Hydrological modelling of different land use change / climate change scenarios in the Red River Basin Quantification of hydrological ecosystem services in the Red River Basin Writing scientific paper Lead author of the white paper: <i>On Spatially Distributed Hydrological Ecosystem Services – Bridging the Quantitative Information Gap using Remote Sensing and Hydrological Models</i> Capacity building
<p>Duration: 2015 Position: Trainer in hydrological modeling</p>	<p><i>Improvement of higher education in water management in view of climatic change in Vietnam</i></p> <p>Main Project Features: This project is executed by a consortium led by TU Delft,</p>

<p>Location: Vietnam Client: NUFFIC-NICHE</p>	<p>and aims to strengthen the education offer in IWRM at two universities in Hanoi</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> • Providing a hydrological modelling course to Vietnamese water professionals • Creating material for hydrology education at TLU
<p>Duration: 2015 - 2016 Position: Trainer Location: Mozambique Client: ARA-Centro, ARA-Centro-Norte, ARA-Norte, ARA-Sul, funded by NUFFIC</p>	<p><i>Training in water resources and allocation models to support decision making for ARAs</i></p> <p>Main Project Features: Training of the staff of three Mozambican water boards (ARAs) in using water resource and water allocation models for strategic and operational decision support (flood prediction, climate change scenarios, land use changes, etc.).</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> • Providing hydrological modelling courses at different locations in Mozambique • Preparing educational material and providing distance-support
<p>Duration: 2015 Position: Hydrological modeler Location: Vietnam, China Client: Netherlands government, National Remote Sensing Dept Vietnam</p>	<p><i>IWRM in the Red River basin: demonstration of remote sensing and models for optimized reservoir management</i></p> <p>Main Project Features: Implementing a flow forecasting system for basin-wide management of multi-purpose reservoirs based on hydrological and hydraulic modelling, in cooperation with different Vietnamese stakeholders and potential end users</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> • Hydrological modelling of the Red River Basin (SPHY) • Managing a small team of hydrologists • Coordination of work packages “Data & Validation” and “Hydrological Modelling
<p>Duration: 2014 - 2015 Position: Hydrologist Location: The Netherlands Client: Province of Noord-Brabant</p>	<p><i>SWIMM - Soil Water evaluation system based on Integrated Measurements and Modelling</i></p> <p>Main Project Features: Developing and implementing an information system for drought monitoring in nature reserves based on hydrological modeling and remote sensing</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> • Processing and combining large geospatial and statistical datasets from different sources • Setting up and running a raster-based hydrological model (SPHY) for long-term simulation of soil water processes and groundwater levels • Disseminating spatiotemporal hydrological information through a smartphone app and website
<p>Duration: 2014 - 2015 Position: Hydrological modeler Location: Netherlands Client: TKI, Netherlands government</p>	<p><i>Ground water for crops: towards a decision support system for optimal crop production through efficient water management</i></p> <p>Main Project Features: Exploring opportunities for a DSS that identifies threats of water shortage and water excess, based on actual soil moisture content and weather forecasting. The SWAP and SPHY models are being fed continuously with field measurements and remote sensing data. For the pilot farms with a Climate Adaptive Drainage (CAD) system installed, farmers can subsequently manage groundwater levels for optimized crop water conditions.</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> • Calibration of a spatial hydrological model based on 1-D SWAP results and soil moisture / groundwater level measurements • Scenario simulation (with and without CAD) • Forecasting of soil moisture content to advice CAD operation
<p>Duration: 2014 Position: Hydrologist and remote sensing specialist Location: Vietnam Client: Netherlands government, National Remote Sensing Dept Vietnam</p>	<p><i>Water and climate services for transboundary water management and disaster risk management</i></p> <p>Main Project Features: Demonstrating the potential of hydrological models and remote sensing for an operational online decision support system for Red River water policy makers</p> <p>Activities Performed:</p> <ul style="list-style-type: none"> • Downscaling of weekly rainfall information using satellite-derived data • Constructing spatial drought impact, vulnerability and risk products based on analyses of rainfall and NDVI time series, as well as soil, land use, terrain information, and ground observations • Presenting the rainfall and drought information products through an online

	<p>platform</p> <ul style="list-style-type: none"> Capacity building of Vietnamese counterparts
<p>Duration: 2014 - 2015 Position: Hydrologist Location: Romania Client: Partners for Water, Netherlands government</p>	<p><i>Online field-specific irrigation advice Romania</i> Main Project Features: Piloting an irrigation decision support system based on-field measurements, simulation modelling of soil moisture and evapotranspiration deficit for a large farm in Western Romania Activities Performed:</p> <ul style="list-style-type: none"> Configuring, calibrating and running a hydrological model Remote sensing image interpretation
<p>Duration: 2013 - 2014 Position: Project manager and remote sensing expert Location: Pilot areas in Egypt, Ethiopia and Sudan Client: IFAD</p>	<p><i>Smart ICT for weather and water information and advice to smallholders in Africa</i> Main Project Features: Innovative approaches are tested and piloted to supply farmers in Africa with information on their crops via smart ICT technologies such as web portals and SMS services. The project aims at lowering the information access barrier in rural Africa and helping farmers in increasing their productivity by providing relevant, field and crop specific information during the growing season. Data components include crop growth, water use efficiency, nitrogen content, weather data and irrigation advice. Activities Performed:</p> <ul style="list-style-type: none"> Project coordination On-site capacity building of local farmers, extension officers and policy makers Managing internet data portals and operational SMS service Managing a small team working on tool development and data processing Participating in tool and information package development
<p>Duration: 2011 - 2013 Position: Project manager, remote sensing expert Location: Egypt Client: World Bank</p>	<p><i>Assessing the effects of farm-level irrigation modernization on water availability and crop yields in the Nile Delta</i> Main Project Features: Evaluating impacts of World Bank funded irrigation improvements in the Nile Delta on consumptive use, crop yields and biophysical / economic water productivity of smallholder farms. Activities Performed:</p> <ul style="list-style-type: none"> General project coordination and communication with client, subcontractors and Egyptian government Land use classification based on satellite information Irrigation efficiency analysis based on satellite information, hydrological modelling results (SWAP) and farmer surveys Analysis of economic water productivity and salinity issues Capacity building during workshops at the Ministry of Agriculture and Land Reclamation, Cairo
<p>Duration: 2012 Position: Remote sensing expert Location: Morocco Client: FAO</p>	<p><i>Land and water productivity in the Doukkala irrigation scheme, Morocco</i> Main Project Features: Mapping of water consumption, agricultural production and water productivity in the Doukkala irrigation scheme (Morocco) based on remote sensing for identification and upscaling of best practices. Activities Performed:</p> <ul style="list-style-type: none"> Crop classification Training of local water managers in using remote sensing for assessing land and water productivity, El Jadida, Morocco
<p>Duration: 2011 - 2012 Position: Project manager, hydrologist and remote sensing expert Location: New Zealand Client: Environment Canterbury</p>	<p><i>Assessment of water consumption from the irrigated Canterbury Plains</i> Main Project Features: Satellite image processing and evapotranspiration modeling, managing an operational system of data delivery, and Water Accounting to assess the sustainability of water use in the river basins of Canterbury, New Zealand. Activities Performed:</p> <ul style="list-style-type: none"> Project coordination Satellite image processing and evapotranspiration modelling Managing an operational system of data delivery Water Accounting to assess the sustainability of water use in the river basins of Canterbury

<p>Duration: 2010 - 2011 Position: Project manager and remote sensing expert Location: Mali Client: Office du Niger / Netherlands Embassy in Mali</p>	<p><i>Irrigation performance of the Office du Niger irrigation system</i> Main Project Features: Delivery of spatial information on the performance of the Office du Niger irrigation system, and assisting local water managers in interpreting these data in the context of an envisaged future operational monitoring system. Activities Performed:</p> <ul style="list-style-type: none"> • Overall project coordination and communication with governmental donors and local authorities • Computing and interpreting spatial water consumption, rice yield and water productivity based on satellite information and field data • Providing course material and capacity building at L'Office du Niger, Ségou, Mali.
<p>Duration: 2010 Position: Remote sensing and water management expert Location: Okavango River Basin Client: FAO</p>	<p><i>Water accounting in the Okavango basin</i> Main Project Features: Pilot project for construction of a universal Water Auditing framework for river basins. Activities Performed:</p> <ul style="list-style-type: none"> • Satellite image processing and land use classification • Modelling of water consumption and biomass production of conserved ecosystems and agriculture • Setting up a water balance for the basin and identifying options for sustainable land and water management through development and application of a new framework for water resources accounting

Language skills

Language	Speaking	Reading	Writing
English	Fluent	Fluent	Fluent
Dutch	Mother Tongue	Mother Tongue	Mother Tongue
French	Moderate	Moderate	Moderate
German	Basic	Moderate	Moderate

Computer skills

Simulation models:	Spatial Processes in Hydrology (SPHY), SWAT, AquaCrop, WEAP, InVEST, SEBAL
Programming:	Python, PCRaster (proficient), R (basic)
GIS/ Remote Sensing:	ArcGIS, QGIS, Erdas Imagine, Google Earth Engine
Standard software:	Microsoft Office

Students supervised

Name	Level	Institute	Year	Title
Rex Steward	MSc.	Wageningen University and Research	2018	Cost-benefit assessment of SLM catchment interventions in Madagascar based on hydrology and erosion modelling
Maurits Kruisheer	MSc.	Vrije Universiteit Amsterdam	2018	Mapping global irrigated area from water consumption estimates using the Google Earth Engine
Agnindhira Napitupulu	MSc.	Delft University of Technology	2016	Comparing different methods for quantifying storage changes in river basins
Joris de Vos	MSc.	Delft University of Technology	2014 - 2015	Determine reservoir operation rules from space and modelling with SPHY: a case study of the Tuyen Quang catchment and reservoir
Maren Wehling	BSc.	VHL University of Applied Sciences	2014	Online parcel-oriented irrigation advice Romania

Publications

Peer reviewed publications:

- Amamath, G., **G.W.H. Simons**, N. Alahacoon, V. Smakhtin, B. Sharma, Y. Gismalla, Y. Mohammed, and M.C.M. Andriessen, 2018. Using smart ICT to provide weather and water information to smallholders in Africa: The case of the Gash River Basin, Sudan. *Climate Risk Management*, 22, 52-66
- Hunink, J., **G. Simons**, S. Suárez, A. Solera, J. Andreu, M. Giuliani, P. Zamberletti, M. Grillakis, A. Koutroulis, I. Tsanis, F. Schasfoort, S. Contreras, E. Ercin, W. Bastiaanssen, 2019: A simplified water accounting procedure to assess climate change impact on water resources for agriculture across different European river basins. *Water*, 11(10), 1976; doi:10.3390/w11101976
- McCartney, M.P., S. Foudi, L. Mutuwatte, A. Sood, **G.W.H. Simons** and K. Vercruyse, 2018. Water, Natural and Built infrastructure, and Ecosystem Services in the Tana River Basin. IWMI Research Report 174.
- Poortinga, A., Bastiaanssen, W.G.M., **Simons, G.W.H.**, Saah, D., Senay, G., Fenn, M., Bean, B. and Kadyszewski, J., 2017. A new self-calibrating high-resolution runoff and streamflow remote sensing model for ungauged basins using open access earth observation data sets. *Remote Sensing* 9(1), 86; doi:10.3390/rs9010086
- Samain, B., **Simons, G. W. H.**, Voogt, M. P., Defloor, W., Bink, N.-J., and Pauwels, V. R. N., 2012. Consistency between hydrological model, large aperture scintillometer and remote sensing-based evapotranspiration estimates for a heterogeneous catchment, *Hydrol. Earth Syst. Sci.*, 16, 2095-2107, doi:10.5194/hess-16-2095-2012
- Simons, G.W.H.**, Bastiaanssen W.G.M., and Immerzeel W.W., 2015. Water reuse in river basins with multiple users: a literature review. *Journal of Hydrology* vol. 522, pp. 558-571; doi10.1016/j.jhydrol.2015.01.016
- Simons, G.W.H.**, Bastiaanssen W.G.M., Ngo, L.A., Hain, C.R., Anderson, M. and Senay, G.B., 2016. Integrating Global Satellite-Derived Data Products as a Pre-Analysis for Hydrological Modelling Studies: A Case Study for the Red River Basin. *Remote Sensing*, 8, 279; doi:10.3390/rs8040279
- Simons, G.W.H.**, Bastiaanssen, W.G.M., Cheema, M.J.M., Ahmad, B., 2019. A novel method to quantify consumed fractions and non-consumptive use of irrigation water: application to the Indus Basin Irrigation System of Pakistan. *Agricultural Water Management*, 236; doi:10.1016/j.agwat.2020.106174
- Simons, G.W.H.**, Droogers, P., Contreras, S., Sieber, J., Bastiaanssen, W.G.M., 2020. Virtual Tracers to detect sources of water and track water reuse across a river basin (*submitted to Water*)
- 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

Conference papers:

- Amamath, G., **Simons, G.W.H.**; Sharma, Bharat; Mohammed, Y.; Gismalla, Y.; Smakhtin, V. 2013. Smart-ICT for weather and water information and advice to smallholders in Africa. In: UNESCO-IHE Institute for Water Education. Conference on New Nile Perspectives Scientific Advances in the eastern Nile Basin, Khartoum, Sudan 6-8 May 2013. Advance copy of extended abstracts. Delft, Netherlands: UNESCO-IHE Institute for Water Education. pp.117-125
- Bartholomeus, R., Van Den Eertwegh, G.A.P.M. and **Simons G.W.H.**, 2015. Anticipating on amplifying water stress: Optimal crop production supported by anticipatory water management. *Geophysical Research Abstracts* Vol. 17, EGU2015-5354
- Bastiaanssen, W., Poortinga, A., Han, L.T., Fenn, M., **Simons, G.**, Ngo, L.A., Nguyen, N.H., Van Eekelen, M., Rebelo, L-M, Jenny, H., Van der Gijn, J., and Rutten, M., 2016. Water Accounting for a comprehensive analysis of river basin processes and management options within an emphasis on Vietnam. in: *Water Security in a Changing Era*, National Center for Water Resources Planning and Investigation (NAWAPI), Hanoi, Vietnam, 2015
- Ha, L.T., W.G.M. Bastiaanssen, Lisa-Maria Rebelo, **Gijs Simons**, Ate Poortinga, 2017. Quantitative Mapping of Hydrological Ecosystem Services to Improve River Basin Management. The International Symposium on Flood-pulse Ecosystems (ISFE), Siem Reap, Cambodia. <http://floodpulse-ecosystems.org/lan-thanh-ha-3/>
- Hunink, J.E., **G. Simons**, S. Contreras, J. P.C. Eekhout, J. de Vente, W. Bastiaanssen, 2018. Water accounting to assess climate change impacts on available water for agriculture. *Geophysical Research Abstracts* Vol. 20, EGU2018-17394

- Terink, W., Droogers, P., van Dam, J., **Simons, G.W.H.**, Voogt, M.P., 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
- Van de Giesen, N., Rutten, M., Coerver, B., **Simons, G.**, Jungermann, N. and Cong, M.V., 2015. Demonstration of an operational decision support system for reservoir managers in the Da River based on open-access remote sensing data and models. *Vietnam wAter Cooperation Initiative (VACI) 2015 Proceedings*, Hanoi, Vietnam
- Van Delden, H., Fleskens, L., Baartman, J., Irvine, B., Van Lynden, G., **Simons, G.**, Vanhout, R., 2018. Exploring alternatives for mitigating land degradation and enhancing livelihoods in tropical regions. *International Congress on Environmental Modelling and Software*, Fort Collins, Colorado, USA
- Van Delden, H., Fleskens, L., Baartman, J., **Simons, G.**, Vanhout, R., 2019. Providing evidence-based support for poverty alleviation and sustainable development in tropical regions. *23rd International Congress on Modelling and Simulation*, Canberra, Australia

Selected technical reports and other publications:

- Bartholomeus, R.P., **G.W.H. Simons**, G.A.P.H. van den Eertwegh, 2015. Anticipating on amplifying water stress: Optimal crop production supported by climate-adaptive water management. *KWR Watercycle Research Institute report 2015.062*
- Bastiaanssen, W.G.M., **Simons, G.W.H.**, Sheridan, P.F., 2012: The potential of satellite-based Information for monitoring water and production related aspects of the sustainability of biofuels, white paper prepared under assignment of Winrock International, 52 pp.
- Bastiaanssen, W., Poortinga, A., Han, L.T., Fenn, M., **Simons, G.**, Ngo, L.A., Nguyen, N.H., Van Eekelen, M., Rebelo, L-M, Jenny, H., Van der Gijn, J., and Rutten, M., 2016. Water Accounting for a comprehensive analysis of river basin processes and management options within an emphasis on Vietnam. in: *Water Security in a Changing Era*, National Center for Water Resources Planning and Investigation (NAWAPI), Hanoi, Vietnam, 2015
- De Klerk, M., A. Kaune, **G. Simons**, A.O. Wussah, J. van Til, 2018. Enhancing irrigation water productivity and yields of pineapple farmers in Ghana. *FutureWater Report 180*
- Den Besten, N.I., J.E. Hunink, **G.W.H. Simons**, 2017. Water Productivity assessment using Flying Sensors and Crop Modelling: Pilot study for Maize in Mozambique, *FutureWater Report 172*
- Droogers, Peter, **Gijs Simons**, Wim Bastiaanssen, Jippe Hoogeveen, 2010. Water Accounting Plus (WA+) in the Okavango River Basin, *WaterWatch technical report (under assignment of FAO)*
- Droogers, P., F. de Boer, M. de Klerk, **G.W.H. Simons**, 2015. Water Resources Model for Kenneti Basin South-Sudan. *FutureWater Report 140*
- Hunink, J.E., S. Contreras, **G.W.H. Simons**, P. Droogers. 2017. Hydrological Evaluation and Ecosystem Valuation of the Lukanga Swamps. *FutureWater Report 167*
- Kaune, A., **G.W.H. Simons**, S. Pareeth, P. Karimi, M. Shaffei. 2019. SMART-WADI: SMART WAtER Decisions for Iran. *FutureWater Report 185*
- Simons, G.W.H.**, J.E. Hunink, 2018. The business case for small hydropower schemes to invest in catchment management: two case studies in Kenya and Tanzania, *FutureWater Report 183*
- Simons, G.W.H.**, M. Kruisheer, 2018. Agricultural Water Consumption in the Australian Border Rivers Catchment: a Preliminary Assessment, *FutureWater Report 177*
- Simons, G.W.H.**, J. Buitink, P. Droogers, J.E. Hunink. 2017. Impacts of climate change on water and sediment flows in the Upper Tana Basin, Kenya. *FutureWater Report 161*
- Simons, G.W.H.**, A. Poortinga, W. Bastiaanssen, D. Saah, A. Troy, J.E. Hunink, M. de Klerk, M. Rutten, P. Cutter, L. Rebelo, L. Thanh Ha, V. Phuong Nam, T. Hessels, M. Fenn, B. Bean, D. Ganz, P. Droogers, T. Erickson, N. Clinton. 2017. On Spatially Distributed Hydrological Ecosystem Services - Bridging the Quantitative Information Gap using Remote Sensing and Hydrological Models. White paper published by FutureWater.
- Simons, G.W.H.** and Voogt, M.P., 2011: Assessment of water consumption from the irrigated Canterbury Plains, Environment Canterbury technical report, New Zealand, ISBN 978-1-927161-68-5, 35 pp.
- Simons, G.W.H.** and Voogt, M.P., 2012: Refined assessment of soil moisture and water consumption on the irrigated Canterbury Plains, Environment Canterbury technical report, New Zealand, ISBN 978-1-927210-76-5, 33 pp.

- Simons, G.W.H.** and Voortman, B.R., 2009: Quantifying the contribution of surface runoff to karst-related flooding between Le Roy and Caledonia, New York, U.S., Utrecht University, Utrecht, The Netherlands, 2009
- Simons, G.W.H.**, G. van den Eertwegh, P. Droogers, 2015. Online Parcel-scale Irrigation Management in Romania: Spatio-temporal Soil Moisture Using SPHY, FutureWater Report 137
- Simons, G.W.H.**, 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), WaterWatch technical report (under assignment of the World Bank).
- Simons, G.W.H.**, N.I. den Besten, P. Droogers, 2017. A First-Order Water Productivity Assessment for the APPROVALE Project, Mozambique, FutureWater Report 170
- Terink, W., P. Droogers, **G.W.H. Simons**, J. van Dam, M.P. Voogt, 2012: The added value of high-resolution over coarse-resolution remote sensing in crop yield forecasting: a case study in the Egyptian Nile Delta. FutureWater Report 116
- Terink, W., P. Droogers, **G.W.H. Simons**. 2015. Reservoir module in SPHY. Implemented in SPHY v2.1. FutureWater Report 136
- 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

In Dutch:

- De Boer, F.S., M. de Klerk, **G. Simons**, P. Droogers, 2017. Pilot optimalisatie waterverdeling Hunze en Aa's. FutureWater Report 163
- Simons, G.**, M. de Klerk, 2019. Kennisbehoefte meteorologische en klimatologische informatie: inventarisatie bij de waterbeheerders, STOWA Rapport 2019-32
- Simons, G.W.H.**, F. Heuff, P. Droogers, F. Witte. 2016. Ontwikkeling en demonstratie van een prototype informatieproduct voor natuurbrandbeheersing (SVIPE-W). FutureWater Report 159
- Simons, G.W.H.**, F. Witte, P. Droogers. 2016. Satellietdatagebruik bij natuurbrandbeheersing: haalbaarheidsstudie naar de ontwikkeling van SWIPE. FutureWater Report 153
- Simons, G.W.H.**, P. Droogers. 2016. Verkenning van remote sensing producten voor het waterbeheer. STOWA Rapport 2016-17.