Curriculum Vitae

Name:	J.E. Hunink, PhD
First Name:	Johannes
Date of Birth:	14 January 1978
Nationality:	Dutch
Main Disciplines:	Water Resources, Climate Change, Hydrology, Remote sensing, Agriculture
Telephone:	+34 690 832 942
Email:	j.hunink@futurewater.es
LinkedIn:	linkedin.com/in/johanneshunink/

Key Qualifications

Dr. Johannes Hunink is a water and climate expert with nearly 20 years of international experience in research and consultancy on integrated water resources management. His expertise spans climate risk and vulnerability assessments, flood and drought hazard maping, water-food-ecosystem nexus problems, and hydrological ecosystem services. With a background in computational geography, he specializes in incorporating satellite data and remote sensing techniques into strategic and operational decision-making tools.

Johannes has led and managed numerous projects across diverse biophysical and socio-economic environments, working with clients such as the World Bank, Asian Development Bank, Inter-American Development Bank, and the European Commission. His work has taken him to a wide array of countries, including Albania, Armenia, Azerbaijan, Bolivia, Cambodia, Chile, Colombia, Ecuador, Gabon, Georgia, India, Indonesia, Kenya, Kazakhstan, Kyrgyzstan, Laos, Mauritius, Morocco, Peru, Tajikistan, Tanzania, Thailand, Uganda, Uzbekistan, Vietnam and Zambia, among others.

Johannes is author and co-author of more than 25 scientific peer-reviewed scientific publications, including several in high-impact journals, and of more than 150 technical reports. He has been reviewer for the European Commission and for several scientific journals in his field. Currently, he coordinates a team of experts in his field as Managing Director of FutureWater´s office in Cartagena, Spain.

Educational Background

2012 – 2017	PhD Remote Sensing and Hydrology (Cum Laude), Universidad Politécnica de Cartagena, Spain. Development of algorithms that combine remote sensing data on different resolutions with field observations for enhanced hydrological applications.
2003 – 2005	MSc Computational Physical Geography (Cum Laude), Universiteit van Amsterdam, The Netherlands. Thesis: The Multiple Scale Modeling Framework: a computational tool to facilitate investigation in hydrological processes on different scales.
2000 – 2003	BSc Physical Geography, Faculty of Science, Universiteit van Amsterdam, The Netherlands. Subjects: groundwater- and surface water-hydrology, soil physics and chemistry, geomorphology
1997 – 1999	BSc Physics (first 2 years), Vrije Universiteit Amsterdam, The Netherlands. Subjects: numerical methods, programming, fluid mechanics.

Professional Experience

2012 –present	Senior Hydrologist and Managing Director @ FutureWater, Cartagena, Spain
2018 – present	Agro-hydrologist @ HiView (www.hiview.nl)
2012 – 2017	Water Resources Management research group member @ Universidad Politécnica de Cartagena, Spain
2011 – 2012	Invited Researcher @ Universidad Politécnica de Cartagena, Cartagena, Spain
2009 – 2011	Hydrologist @ FutureWater, Wageningen, The Netherlands
2006 – 2009	Water resources analyst @ TYPSA (Técnica y Proyectos S.A, engineering consultancy), Barcelona, Spain
2005 – 2006	Communications officer @ Key Resorts, Murcia, Spain
2004	Hydrologist trainee @ Ecociencia research institute, Quito, Ecuador
2003	Consultant trainee @ Tauw BV engineering consultancy, Amsterdam, The Netherlands

Overseas Professional Experience

Resident:

Spain, Netherlands, Ecuador

Non-resident assignments:

Albania, Angola, Armenia, Azerbaijan, Bolivia, Cambodia, Chile, Colombia, Ethiopia, Gabon, Georgia, India, Indonesia, Kenya, Kazakhstan, Kirgizstan, Laos, Mauritius, Morocco, Mozambique, Panama, Perú, Rwanda, Tajikistan, Tanzania, Thailand, Turkmenistan, Uganda, United Kingdom, Uzbekistan, Vietnam, Zambia

Selection of Assignments and Projects

2023 – 2026	Water allocation modeling and climate change impacts in the upper Syr Darya river basin – WE-ACT project, Horizon Europe. Client: European Commission
2024	Scientific writing for flagship publication on adaptation needs across the Asian-Pacific region. Client: Asian Development Bank
2024	Climate change risk screening and due diligence for olive farms in Andalucia, Spain. Client: private investor
2024	Climate change expert within proposal writing for Green Climate Fund, for large water sector project across the Amazone basin. Client: IADB
2023 – 2024	Water Stewardship in the Doñana region, Spain: water resources assessment and stakeholder consultations. Client: Alliance for Water Stewardship
2024	Climate hazard mapping and adaptation options identification for Turkeministan, water and agriculture sector. Client: Asian Development Bank
2024	Addis Ababa Water Fund: scientific support to feasibility study on nature-based solutions and water supply. Client: Nature 4 Water Facility
2024 – 2027	Megadroughts in Europe: drought indices and adaptation approaches (MegaWat project). Client: CDTI
2024 – 2025	Climate risk screening of portfolio of investment projects for Uzbek government across several sectors. Client: Asian Development Bank

2023 - 2024	Climate risk and water resources analysis for agriculture and water sector of Georgia. Client: Asian Development Bank
2022 – 2023	Business case analysis of nature-based solutions for Water Fund, Norfolk, United Kingdom. Client: Nature Conservancy
2022 – 2023	Climate risk assessment and adaptation planning for agriculture and water sector of Uzbekistan. Client: Asian Development Bank
2021 – 2022	Hydrological study of lagoon suffering from eutrophication in Spain (Mar Menor). Client: National Research Council, Spain
2022 - 2026	Development of capacity building tool on water savings measures, based on concept co-developed with FAO called Real Water Savings (BONEX project). Client: PRIMA research grant
2021 – 2023	Methodological framework development of next-generation Climate and Disaster Risk Screening tool for Asian Development Bank and member countries
2021 – 2023	Lead of project on Glacio-hydrological modeling and IWRM in the Uttarakhand region, India. Client: SDC.
2021 – 2023	Agri-food climate vulnerabilities related to trade between Netherlands, Turkey and Morroco. Client: Dutch Ministry of Agriculture
2020 – 2021	Key expert on climate change and robust decision making for land use plan of the Panama Canal basin. Client: IADB
2020 – 2021	Hydrological analysis for water use efficiency study in oil palm, Colombia. Client: RVO
2020 – 2022	Climate change expert for development of the Water Pillar Strategy for Central Asia. Client: ADB
2020	eLearning training for water resources board professionals of Rwanda on water allocation tools. Client: Nuffic
2020	eLearning training for water board professionals of Kenya on hydrological modeling. Client: Blue Deal
2020	Climate Risk Assessment for Irrigation and Drainage investment project in Tajikistan. Client: ADB.
2020 – 2022	Development of remote sensing-based decision support tools for smallholders in Angola. Client: NSO
2020	Climate Risk and Vulnerability Assessments for two irrigation and drainage projects in Uzbekistan. Client: ADB
2019	Assessment of the Status of Water Resources and Eco-hydrology for the main river basins of Cambodia. Client: Asian Development Bank
2019	Climate risk assessment of a river basin management plan and several water resources investments (dams, green infrastructure, groundwater extractions) in Peru, Chancay-Lambayeque basin. Client: World Bank
2019	Climate risk and vulnerability assessment for project to rehabilitate the energy distribution network in Uzbekistan. Client: ADB
2018 - 2019	Climate risk assessment of irrigation development project (Kenya) and hydropower project (Nepal) using the WorldBank supported Decision Tree Framework approach. Water resources and crop modeling. Client: WB
2018	Conceptual design and market study for a climate service that provides seasonal forecasts for agricultural sector (AgriSeasonal). Client: EIT (Climate-KIC)
2018 – 2019	Hydrological modeling, flood extreme analysis, water balance assessment and operational rule curves, climate risk assessment, for preliminary design of dike for Muhazi Lake, Rwanda. Client: W4G, Rwanda

2018 - 2022	Researcher in European H2020 project TWIGA, on satellite-based geo-data, drones, in-situ sensors and citizen science to develop information services for sub-Saharan Africa
2018	Expert review of Environmental and Social Impact Assessment (ESIA) of three water supply projects in Kenya. Client: MER Commissie
2017 – 2018	Assessment of water balance of Mar Menor lagoon (Spain) including subsurface inflows, to reduce negative impacts and eutrophication problems
2017 - 2019	Several (glacio-) hydrological assessments for project viability studies of run-of-river hydropower facilities in Georgia, Client: private investors in hydropower sector
2017	Analyst for preparation of a Green Climate Fund proposal to support Uzbekistan in upgrading and expanding its domestic water supply system in an all-inclusive climate resilience approach. Client: ADB
2017	Feasibility study on using Flying Sensors and crop models to map yield gaps and options to boost water productivity. Case study in Mozambique. Client: RVO
2017 – 2019	Implementation of drought information system in operational early warning system, Cauca region, Colombia. HERMANA project. Client: CVC and Partners for Water
2017	Drought Expert during Disaster Risk Reduction mission to Bolivia in response to drought event 2016-2017 in La Paz, financed by Dutch Govt.
2016 - 2017	Assessment of benefits from enhanced forest and agricultural management for hydropower in Gabon (UNDP, The Nature Conservancy)
2016	Technical assistance and capacity building on climate change vulnerability and impact assessment using FAO crop productivity modeling tool, targeted to local experts in Armenia (European Commission)
2016	Study on impacts of climate change and sustainable land management investments on water and sediment flows in the Upper Tana, Kenya, within WISE-UP project (IUCN, IWMI)
2016	Project lead of hydrological evaluation of Lukanga Swamps, Zambia, to assess flooding dynamics and its role to sustain hydrological ecosystem services (The Nature Conservancy)
2016 – 2020	Researcher in European research and innovation project BRIGAID (Horizon 2020 programme) on market transfer of technologies for water resources management. Using drones and satellite imagery for drought management.
2015 – 2019	Researcher and leader of agriculture-drought work package in European Union-funded (H2020) project IMPREX (http://imprex.eu/) on developing climate services and improving predictions of hydrological extremes (budget 8M€, 23 partners).
2013 – 2016	Drought early warning and management system for Spain (www.infosequia.es), using satellite information and water resources modeling, co-funded by Spanish Ministry of Economy and Innovation.
2015	Design study for the development of a Payment for Watershed Services scheme coordinated by WWF in the Rwenzori Mountains National Park, Uganda, based on hydrological and agronomic analysis.
2015	Lead in hydrological pre-feasibility study for run-of-river hydropower facility in Sulawesi, Indonesia.
2015	Erosion assessment for the Mahale Mountains, as input to the Atlas of Water Resources for Lake Tanganyika, Tanzania, developed by The Nature Conservancy
2014-2015	Hydrologic modeling for an interactive global online platform to evaluate impact and adaptation strategies to climate change. Client: European Institute of Innovation and Technology (EIT)
2014 - 2015	Risk assessment and modeling of climate change impacts on water availability and the water-related energy sector in the Central Asia region, funded by World Bank.

2014 – 2015	Water Accounting assessment using UN-SEEAW framework in the Segura basin, Spain. Pilot project DG-Environment (European Commission), supporting Guidance document on the application of water balances for implementation of the Water Framework Directive
2013 – 2014	Business case development and biophysical analysis of investment portfolios for the Nairobi Water Fund, in the Upper Tana basin of Kenya, promoted by The Nature Conservancy.
2011 - 2014	Agro-hydrologist and WP-leader in EU-FP7 project SIRRIMED (www.sirrimed.org), on sustainable use of irrigation water in the Mediterranean Region, developing GIS-based irrigation district and watershed information systems integrating remote sensing and hydrological modeling tools.
2014	Satellite-based high-resolution rainfall assessment for pilot study in the Red River basin in Vietnam, supported by Dutch Ministry.
2013	Modeling and data analysis for a regional study on crop production and food requirements under climate change for the Lower Mekong Basin, financed by the Mekong River Commission.
2012 – 2013	Technical support to development of operational tool for streamflow forecasting and hydropower management within INTOGENER (Integration of EO data and GNSS-R signals for ENERgy applications) project, Chile, partly funded by European Space Agency.
2013	Scoping study on the impact and possible mitigation measures for source control of agricultural runoff affecting urban flooding in the island Mauritius
2012 - 2013	Generation of high-resolution precipitation estimates in mountain areas of Ecuador to quantify the spatial variability of water resources for agricultural planning, combining remote sensing with ground measurements.
2011 -2012	Researcher and project management of a pilot funded by European Commission DG Environment on development of prevention activities to halt desertification in Europe (REDSIM), developing and evaluating a remote-sensing based DSS for irrigation management.
2010 – 2012	Crop modeling of Climate Change vulnerability and adaptation strategies for agricultural systems in Albania, Armenia, Azerbaijan, Georgia and Uzbekistan (World Bank study).
2011 - 2012	Analysis of soil and water resources to assess irrigation potential in seven countries (Burundi, Eastern DRC, Kenya, Rwanda, Southern Sudan, Tanzania, and Uganda) in the Nile basin, for the Nile Basin Initiative (NBI).
2011	Proof-of-concept of the Green Water Credits initiative in the Sebou basin, Morocco, assessing impact of improved water and soil management on water availability upstream and downstream.
2010 - 2011	Data analysis and soil erosion modeling for baseline survey on reservoir sedimentation in Tana basin, for the Water Resources Management Authority of Kenya.
2009	Principle researcher in a pilot project with the Dutch National Institute for Public Health and the Environment (RIVM) focused on the suggested relation between the Q fever transmission to humans and local environmental conditions as soil moisture, vegetation and wind speed.
2009-2010	Researcher and trainer in an IFAD (International Fund for Agricultural Development) supported project to implement the Green Water Credits (GWC) mechanism in the Tana basin in Kenya for improved water and soil management. Assessment of water sources, flows and demand using hydrological model SWAT.
2008-2009	Researcher and advisor for a groundwater management plan for the Catalonian Water Agency. Modeling using MODFLOW to obtain insight in the water balance and the effects of different management scenarios.

2008	On loan at the Catalonian Water Agency - Spain as a researcher/advisor on remote sensing and planning of water resources, combining different observed and forecasted data sources in a decision support tool
2008	Project leader of study assessing debris flow hazards in the Pyrenees, using a bi-dimensional flood routing model for mud and debris flows (FLO-2D)
2007	Principal consultant for a project aiming to reduce discharges of combined sewer systems to the environment. Fieldwork and modeling (10 municipalities), using urban drainage package Infoworks CS
2006	Lead analysist of Stormwater Drainage Master Plan of 6 coastal municipalities in Catalonia using the hydrological model MIKE SHE.
2005	Design and planning of communication campaign focused on water conservation and environmental sustainability for a golf resort (Spain).
2004	Trainee, launching a project that evaluated the influence of land-use changes on hydrology using basin hydrological model SWAT in Cotopaxi region, Ecuador.

Language Skills

Dutch:	mother tongue
English:	fluent in writing and speech
Spanish:	fluent in writing and speech
Catalan:	moderate
German:	moderate
French:	moderate

Computer Skills

GIS / Remote Sensing:	ArcGIS, QGIS, Erdas Imagine, Idrisi, Surfer.
Simulation models:	SPHY, SWAT, HEC-HMS, HEC-RAS, SOBEK, FLO-2D, Infoworks CS, Visual Modflow, WEAP, SWAP, AquaCrop, MIKE SHE.
Programming:	MatLab, Python, R, Fortran
Databases:	MySQL, SQLite

Miscellaneous

- Experienced in providing **training** on (agro-)hydrological modelling, GIS, and use of remote sensing for water resources assessments. Beginners and advanced levels.
- **Reviewer** for the following scientific journals:
    - Science of the Total Environment
    - Agricultural Water Management
    - Remote Sensing
    - Hydrology and Earth System Sciences
    - Hydrological Processes
    - Water
    - Land Degradation & Development
    - Biosystems Engineering
    - Spanish Journal of Agricultural Research
- Scientific impact score, **h-index**: 21
- Enjoys playing piano, drums and percussion

Publications

Peer-reviewed publications

Ercin, E., Veldkamp, T.I.E. & **Hunink, J.E.,** 2021**.** Cross-border climate vulnerabilities of the European Union to drought. Nature Communications 12, 3322, doi: 10.1038/s41467-021-23584-0

Straatsma, M., Droogers, P., **Hunink, J.E**, Berendrecht, W., Buitink, J., Buytaert, W., Karssenberg, D., Schmitz, O., Sutanudjajaa E.H.,van Beek, L.P.H., Vitolo, C., Bierkens M.F.P., 2019. Global to regional scale evaluation of adaptation measures to reduce the future water gap. Environmental Modelling & Software, 104578.

Hunink, J.E., Simons, G., Suárez-Almiñana, S., Solera, A., Andreu, J., Giuliani, M., Zamberletti, P., Grillakis, M., Koutroulis, A., Tsanis, I., Schasfoort, F., Contreras, S., Ercin, E. and Bastiaanssen, W., 2019. A Simplified Water Accounting Procedure to Assess Climate Change Impact on Water Resources for Agriculture across Different European River Basins, Water, 11(10), doi:10.3390/w11101976.

Willemen, L., Crossman, N. D., Newsom, D., Hughell, D., **Hunink, J. E.**, & Milder, J. C., 2019. Aggregate effects on ecosystem services from certification of tea farming in the Upper Tana River basin, Kenya. Ecosystem Services, 38, 100962.

Alcolea, A., Contreras, S., **Hunink, J. E**., García-Aróstegui, J. L., Jiménez-Martínez, J., 2019. Hydrogeological modelling for the watershed management of the Mar Menor coastal lagoon (Spain). Science of The Total Environment.

Nobre, G. G., **Hunink, J. E.**, Baruth, B., Aerts, J. C., Ward, P. J., 2019. Translating large-scale climate variability into crop production forecast in Europe. Scientific reports, 9(1), 1277.

García-León, D., Contreras, S., **Hunink, J.E.,** 2019. Comparison of meteorological and satellite-based drought indices as yield predictors of Spanish cereals. Agricultural Water Management, 213, 388-396.

Eekhout, J. P., **Hunink, J. E.**, Terink, W., de Vente, J, 2018. Why increased extreme precipitation under climate change negatively affects water security. Hydrology and Earth System Sciences, 22(11), 5935-5946.

Hunink, J.E.; Eekhout, J.P.C.; Vente, J.D.; Contreras, S.; Droogers, P.; Baille, A. 2017. Hydrological Modelling using Satellite-Based Crop Coefficients: A Comparison of Methods at the Basin Scale. Remote Sensing, 9, 174. doi: 10.3390/rs9020174

Romero-Trigueros, C., Nortes, P.A., Alarcón, J.J., **Hunink, J.E.**, Parra, M., Contreras, S., Droogers, P., Nicolás, E., 2016. Effects of saline reclaimed waters and deficit irrigation on Citrus physiology assessed by UAV remote sensing. Agricultural Water Management, 183, 60-69. doi: 10.1016/j.agwat.2016.09.014

Vogl, A.L., Bryant, B.P., **Hunink, J.E.**, Wolny, S., Apse, C., Droogers, P., 2016. Valuing investments in sustainable land management in the Upper Tana River basin, Kenya. Journal of Environmental Management, 195, 78-91. doi: 10.1016/j.jenvman.2016.10.013

Jimenez-Martinez, J., Garcia-Arostegui, J.L., **Hunink, J.E**., Contreras, S., Baudron, P., Candela, L., 2016. The role of groundwater in highly human-modified hydrosystems: A review of impacts and mitigation options in the Campo de Cartagena-Mar Menor coastal plain (SE Spain). Environmental Reviews, 2016, 24, 377-392. doi:10.1139/er-2015-0089

Van den Hurk, B.J.J.M., Bouwer, L.M., Buontempo, C., Döscher, R., Ercin, E., Hananel, C., **Hunink, J.E**., Kjellström, E., Klein, B., Manez, M., Pappenberger, F., Pouget, L., Ramos, M.-H., Ward, P.J., Weerts, A.H., Wijngaard, J.B., 2016. Improving predictions and management of hydrological extremes through climate services. Climate Services 1, 6–11. doi:10.1016/j.cliser.2016.01.001

Hunink, J. E., Contreras, S., Soto-García, M., Martin-Gorriz, B., Martinez-Álvarez, V., Baille, A., 2015. Estimating groundwater use patterns of perennial and seasonal crops in a Mediterranean irrigation scheme, using remote sensing. Agricultural Water Management, 162, 47–56. doi:10.1016/j.agwat.2015.08.003

Tapsuwan, S**., Hunink, J.E.**, Alcon, F., Mertens-Palomares, A., Baille, A., 2014. Assessing the design of a model-based irrigation advisory bulletin: the importance of end-user participation. Irrigation and Drainage. Irrigation and Drainage, 64, 228–240 doi: 10.1002/ird.1887

Kauffman, S., Droogers, P., **Hunink, J.E.,** Mwaniki, B., Muchena, F., Gicheru, P., Bindraban, P., Onduru, D., Cleveringa, R., Bouma, J., 2014. Green Water Credits – exploring its potential to enhance ecosystem

services by reducing soil erosion in the Upper Tana basin, Kenya. International Journal of Biodiversity Science, Ecosystem Services & Management, 1–11, doi:10.1080/21513732.2014.890670.

Hunink, J.E., Immerzeel, W.W., Droogers, P., 2014. A High-resolution Precipitation Two-step mapping Procedure (HiP2P): development and application to a tropical mountainous area. Remote Sensing of Environment, 140:179-188. DOI: 10.1016/j.rse.2013.08.036

Hunink, J.E., Niadas, I.A., Antonaropoulos, P., Droogers, P., de Vente, J., 2013. Targeting of intervention areas to reduce reservoir sedimentation in the Tana catchment (Kenya) using SWAT. Hydrological Sciences Journal, 58 (3), 1–15., doi: 10.1080/02626667.2013.774090

Hunink, J.E., Droogers, P., Kauffman, S., Mwaniki, B.M., Bouma, J., 2012. Quantitative simulation tools to analyze up- and downstream interactions of soil and water conservation measures: Supporting policy making in the Green Water Credits program of Kenya. Journal of Environmental Management, 111: 187-194. doi: 10.1016/j.jenvman.2012.07.022

Bouma, J., Droogers, P., Sonneveld, M. P. W., Ritsema, C. J., **J.E. Hunink,** Immerzeel, W. W., and Kauffman, S. 2011. Hydropedological insights when considering catchment classification, Hydrology and Earth System Sciences, 15, 1909-1919.

Van der Hoek, W., **J.E. Hunink**, P. Vellema, P. Droogers, 2011. Q fever in the Netherlands: the role of local environmental conditions. International Journal of Environmental Health Research, 21 (6): 441-451. DOI: 10.1080/09603123.2011.574270

Selection of conference proceedings or posters

Ball, S., M.F. Sanchez, M. Werner, S.T. Escobar Carmona, C.Y. Soto Chavez, M. Wuis, S. Contreras, K. Douben, M. Visser, **J.E. Hunink**. 2019. Co-Design of an Integrated Operational Water Management Tool For the Valle Del Cauca, Colombia. E-Proceedings of the 38th IAHR World Congress. doi.10.3850/38WC092019-1424.

Van Opstal, J.D., A. Kaune, C. Nolet, J. van Til, **J.E. Hunink**. 2019. Flying Sensors for Smallholder Farming: An Innovative Technology for Water Productivity Assessment. Conference Paper 3rd World Irrigation Forum (WIF3), 1-7 September 2019, Bali, Indonesia.

Hunink, J. E., Simons, G., Contreras, S., Eekhout, J. P., de Vente, J., & Bastiaanssen, W. (2018, April). Water accounting to assess climate change impacts on available water for agriculture. In EGU General Assembly Conference Abstracts (Vol. 20, p. 17394).

Bierkens, M. F., Droogers, P., **Hunink, J.**, Buitink, J., Sutanudjaja, E., Karssenberg, D., ... & Straatsma, M. W. (2017, December). Closing the 21st century global water gap: costs and effectiveness of adaptation measures. In AGU Fall Meeting Abstracts.

De Tomas, A., **J.E. Hunink**, 2017. Seasonal Forecasting of Reservoir Inflow for the Segura River Basin, Spain. EGU General Assembly Conference Abstracts 19, 15854

Contreras, S., D. Garcia-León, **J.E. Hunink**, 2017. InfoDROUGHT: Technical reliability assessment using crop yield data at the Spanish-national level. EGU General Assembly Conference Abstracts 19, 14660

Eekhout, J.P.C., **J.E. Hunink**, J. de Vente, 2017. How increased extreme precipitation under future climate change affects plant water stress and water availability. EGU General Assembly Conference Abstracts 19, 16715

Straatsma, M., P. Droogers, **J.E. Hunink**, J. Buitink, E. Sutanudjaja, D. Karssenberg, R. van Beek, M. Bierkens, 2017. Global water marginal cost curves to battle the future water gap. EGU General Assembly Conference Abstracts 19, 1813

Guimarães-Nobre, G., **J.E. Hunink**, B. Baruth, J.C.J.H. Aerts, PJ Ward, 2017. Climate variability and the European agricultural production. EGU General Assembly Conference Abstracts 19, 10105

Contreras, S., **Hunink, J.E.**, 2016. InfoSequia: the first operational remote sensing-based Drought Monitoring System of Spain. Poster at EGU 2016, Vienna.

Contreras, S., **Hunink, J.E.,** 2015. Drought effects on rainfed agriculture using standardized indices: A case study in SE Spain. In Andreu et al. (eds) Droughts: Research and Science-Policy Interfacing, 65-70. CRC Press (Taylor and Francis Group), London. ISBN: 978-1-138-02779-4.

Hunink, J.E., W.W. Immerzeel, P. Droogers, 2013. Estimating the spatial distribution of precipitation using remote sensing proxies and observed data in a tropical mountainous region. Poster at 11th International Precipitation Conference, July 2013, Wageningen, Netherlands.

Gallego-Elvira, B., M. Bahir, A.G. Garcia, **J.E. Hunink**, A. Baille, G. Boulet, O. Boutron, P. Chauvelon, D. Courault, C. Di Bella, S. Garrigues, Y. Inoue, O. Marloie, B. Martin, O. Merlin, M. Mira, A. Olioso, S. Reyes-Castillo, V. Rivalland, M. Weiss, 2013. Evaluation of EVASPA, a tool for mapping evapotranspiration from space. Poster at 7th HyMeX Workshop, 7-10 October 2013, Cassis, France.

Hunink, J.E., W.W. Immerzeel, P. Droogers, Baille, A., 2013. A multi-scale modelling approach for mapping rainfall and evapotranspiration from remote sensing-derived land surface attributes. Poster at II Workshop de Investigación Agroalimentaria, Cartagena, Spain, May 2013.

Hunink, J.E., Tapsuwan, S., Alcon, F., Mertens-Palomares, A., Baille A., 2012. Enabling responsiveness of farmers to altering weather patterns: an irrigation bulletin for better planning and adaptation. Poster at Workshop "Responses to Extreme water related events", Madrid, Spain, Nov-2012.

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

Hunink, J.E. and Baille, A., 2012. Overview of agro-hydrological models: tools to provide relevant soil water information for irrigation. In: The use of remote sensing and geographic information systems for irrigation management in Southwest Europe. Options Méditerranéennes, Series B: Studies and Research, no. 67. Eds. M.Erena, A.Lopez-Francos, S. Montesinos, J.F.Berthoumieu. CIHEAM, Spain. ISBN 2-85352-482-5.

Van der Hoek, W., **J.E. Hunink**, T. Veenstra, P. Droogers, 2010. Q Fever in the Netherlands: the role of local environmental conditions in the largest epidemic ever reported. Proceedings of the 2010 International Conference on Emerging Infectious Diseases, Atlanta.

Pérez-Paricio, **J.E. Hunink**, E. Kupper and J. Raso Quintana, 2010. Estimation of the river conductance coefficient using streambed slope for modeling of regional river-aquifer interaction. XVIII International Conference on Computational Methods in Water Resources, 2010, Barcelona.

Kupper, E., A. Pérez-Paricio, J. Raso Quintana and **J.E. Hunink**, 2009. Primer Plan Director de Usos de un acuífero aluvial en Cataluña. Jornadas de Ingeniería de Agua, 2009, Madrid.

Hunink, J.E., Bouten, W. and E.E. van Loon, 2007. Use of a nested modeling framework to study multiscale hydrological processes. Numerical Modelling of Hydrodynamics for Water Resources. ISBN 13: 978.0.415.44056.1

Raso, J. and **J.E. Hunink**, 2007. A coupled 1D-2D modeling study of the 1907 flood in the Ebro delta. Numerical Modelling of Hydrodynamics for Water Resources. ISBN 13: 978.0.415.44056.1

Hunink, J.E., Peñas Castejon, J.M., Van Mourik, J. and A. Faz, 2004. Environmental risks associated with wind-erosion promoted by the mobility of heavy metals in the forming of secondary minerals. Book of International Congress on Land Degradation. ISBN 84-95781-42-5

Technical reports and other publications (from 2009)

Contreras, S., M. Bea, **J.E. Hunink**. 2024. Hydrological Assessment, Risk Analysis and Farming Opportunities in the Doñana Ecosystem and the Coast of Huelva (Spain): AWS Catchment Status Report. FutureWater Report 253.

Droogers, P., J**.E. Hunink**, T. Schults, J. Sieber. WEAP Erosion Plugin manual. Technical Report.

D. De Condappa, Hunink, J.E., Khanal, S., Nolet, C., Gaffarov, K., Gojenko, B., Muradov, R., Dosmukhamedova, R., Gaipnazarov, N., Iskanov, A., Kholmatjanov, B., Khujakulov, A., Mamarasulov, K., Tursunov, M., Van der Tak, C. 2023. Climate Risk Analysis and Prioritisation of Adaptation Measures for the Amu Darya River Basin, Uzbekistan. Final Report.

Contreras, S., A. Fernández, **J.E. Hunink**, G.W.H. Simons. 2023. InfoSequia-4CAST: Water Supply Pilot Case. FutureWater Report 234.

Contreras, S., J.L. García-Aróstegui, V. Robles-Arenas, **J.E. Hunink**. 2023. Historical and Recent Patterns of Groundwater Recharge in the Campo De Cartagena Quaternary Aquifer by Combining Hydrological Modelling and Satellite Data. Technical Report. AQUIFER Project (SOE4/P1/E1045)

Droogers, P., Khanal, S., **Hunink, J.E**. 2022. Water Allocation in Bhagirathi Basin, India. FutureWater Report 253.

Khanal, S., Nick, F., Fiddes, J., Kraaijenbrink, P., Immerzeel, W., **Hunink, J.E.** 2022. Present-day and Future Changes in the Hydrology of the Bhagirathi Basin. FutureWater Report 252.

Droogers, **J.E. Hunink** et al. Design study for the creation of a Water Fund for Mombasa City. 2022. Technical report.

Bird, J., J**.E. Hunink**, J. Winpenny, S. Chikanayev, 2021. Developing the Water Pillar - Scoping Report. Asian Development Bank, TA-9977

Beard, J.E., J**.E. Hunink.** 2021. Climate and Disaster Risk and Vulnerability Assessment of the Irrigation and Drainage Modernisation in the Vakhsh River Basin Project. Technical report.

FutureWater - IDOM, 2021. Plan Indicativo de Ordenamiento Territorial Ambiental (PIOTA) para la Cuenca Hidrográfica del Canal de Panamá (CHCP).

Koster, R., G.W.H. Simons, **J.E. Hunink**, R. Hamed. 2021. Rainfall radar for soil moisture forecasts in the Netherlands: Development and testing of climate service DroogteNL. FutureWater Report 225.

Droogers, P., J**.E. Hunink**, R. Koster. 2021. Effectiveness of Improved Watershed and Forestry Activities to secure Hydropower, Komo river, Gabon. FutureWater Report 224

Hunink, J.E., J. Bird, 2021. Scoping Study for the CAREC Water Pillar: Climate Resilience Through Regional Cooperation . FutureWater Report 240.

Hunink, J.E. 2021. Detailed Climate Risk and Vulnerability Assessment for Water Resources Investment Projects in the Aral Sea Basin. FutureWater Report 258.

Kaune, A., J**.E. Hunink**, C. Lugtenberg, L. Demmink, M. Goretti, C. Perez, N.A.A. Arias, M. Montiel, 2020. Baseline assessment for efficient irrigation of oil palm in the Sevilla basin, Colombia. FutureWater Report 219

Hunink, J.E., G.W.H. Simons, C. Mor, A. Oliver, 2020. Revenue sharing in small hydropower: is it worth it? International Water Power & Dam Construction Magazine. July 2020. 24-27

Hamed, R., A. De Tomas, S. Contreras, **Hunink, J.E.** 2019. Seasonal Hydrological Forecasting for the Segura River Basin, Spain. FutureWater Report 197.

Nolet, C., J. Beard, A. Green, **J.E. Hunink**, G.W.H. Simons. 2019. Climate Risk Screening for the Tonle Sap River Basin and the Mekong Delta River Basin, Cambodia. FutureWater Report 208

Green, A., P. Droogers, G.W.H. Simons, B. van Balen, K. Hortle, C. Oeurng, T. Bonvongsar, D. Yem, **J.E. Hunink**. 2019. Detailed Surface Water Resources Assessment for the Tonle Sap and Mekong Delta River Basins, Cambodia. FutureWater Report 207

Green, A., K.G. Hortle, W. Giese, B. van Balen, D. Yem, J. Mills, I. Brownhall, P. Droogers, G.W.H. Simons, **J.E. Hunink**, C. Oeurng, T. Bonvongsar. 2019. Rapid Assessment of Eco-Hydrology for the Tonle Sap River Basin and Mekong Delta River Basin, Cambodia. FutureWater Report 206

Droogers, P., A. Green, G.W.H. Simons, I. Brownhall, C. Oeurng, T. Bonvongsar, **J.E. Hunink**. 2019. Rapid Assessment of the State of Water Resources for the Tonle Sap River Basin and Mekong Delta River Basin, Cambodia. FutureWater Report 205

Van der Vat, M.P., **J.E. Hunink**, D. Stuparu. 2019. Lower Nzoia Project – Final Report, Climate Change Risk Analysis for projects in Kenya and Nepal. Deltares, FutureWater and University of Cincinnati for the World Bank.

Taner M.Ü., **J.E. Hunink**, S. Contreras, A. Hijar, R. Hamed, D. Morales, A. Wasti, P. Ray. 2019. El Marco del Árbol de Decisión: Aplicación a la Cuenca de Chancay-Lambayeque, Peru. Informe final. Deltares, FutureWater, INSIDEO and University of Cincinnati para el Banco Mundial.

McCartney, M.; Foudi, S.; Muthuwatta, L.; Sood, A.; Simons, G.; **Hunink, J**.; Vercruysse, K.; Omuombo, C. 2019. Quantifying the services of natural and built infrastructure in the context of climate change: the case of the Tana River Basin, Kenya. Colombo, Sri Lanka: International Water Management Institute (IWMI). 61p. (IWMI Research Report 174). [doi: 10.5337/2019.200]

Hunink, J.E., J.P.C. Eekhout, J. de Vente, S. Contreras, G.W.H. Simons. 2019. Satellite-based altimetry data for hydrological assessments: two case studies. FutureWater Report 194

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., 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.

Khanal, S., **J.E. Hunink**. 2017. Hydrological pre-feasibility assessment for hydropower facility in Northern Georgia. FutureWater Report 175.

Contreras, S., **J.E. Hunink**, A. Baille. 2017. Water and carbon fluxes in irrigated citrus orchards assessed from satellite data. FutureWater Report 174.

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, P., A.F. Lutz, **J.E. Hunink**. 2017. Climate Risk and Vulnerability Assessment for Western Uzbekistan Water Supply. FutureWater Report 171.

De Keizer, O, **J.E. Hunink**. 2017. Dutch Risk Reduction Team Bolivia - Technical assistance on drought information and early warning systems. DRR Mission Report.

Hunink, J.E., M. de Klerk, F. de Boer, P. Droogers. 2017. Effectiveness of Improved Watershed Activities in Mbé River, Gabon. FutureWater Report 168.

Hunink, J.E., S. Contreras, G.W.H. Simons, P. Droogers. 2017. Hydrological Evaluation and Ecosystem Valuation of the Lukanga Swamps. FutureWater Report 167.

Hunink, J.E., P. Droogers. 2017. Assistance in using Modeling Tools for Climate Change Vulnerability and Impact Assessment. Armenia. FutureWater Report 162.

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.

Buitink, J., **J.E. Hunink**, P. Droogers, P. Torfs. 2016. Large scale adaptation strategies to climate change in the water-sector: An overview of the water allocation model WatCAM. FutureWater Report 157.

Hunink, J.E., A. Kasangaki, H. Edison, P. Droogers. 2016. Preliminary Hydrological and Agronomic Study for a Payment for Watershed Services Scheme in Rwenzori Mountains National Park, Uganda. FutureWater Report 149

Droogers, P., **Hunink, J.E.**, Lynden, G., van Til, J., 2015. Flying Sensors for Monitoring Green Water Credits. HiView Report, Wageningen, Netherlands

Hunink, J.E., S. Contreras, P. Droogers. 2015. Hydrological pre-feasibility assessment for the Romuku hydropower plant Central Sulawesi, Indonesia. FutureWater Report 141

Contreras, S., **Hunink, J.E.**, 2015. Water accounting at the basin scale: water use and supply (2000-2010) in the Segura River Basin using the SEEA framework. FutureWater report 138

Apse, C., Bryant, B., Droogers, P., **Hunink, J.E**., Kihara, F., Leisher, C., Vogl, A., Wolny, S., 2015. Upper Tana-Nairobi Water Fund: A Business Case. The Nature Conservancy: Nairobi, Kenya

Hunink, J. E., Droogers, P., 2015. Impact Assessment of Investment Portfolios for Business Case Development of the Nairobi Water Fund in the Upper Tana River, Kenya. FutureWater Report 133

Hunink, J.E., A.F. Lutz, P. Droogers. 2014. Regional Risk Assessment for Water Availability and Water-related Energy Sector Impacts in Central Asia. FutureWater Report 196.

Hunink, J.E., Droogers, P., Tran-Mai, K. 2014. Past and Future Trends in Crop Production and Food Demand and Supply in the Lower Mekong Basin. Prepared by FutureWater for Mekong River Commission (MRC) Climate Change and Adaptation Initiative (CCAI). Version 9. Feb-2014.

Contreras, S., **Hunink, J.E**., Baille, A., 2014. Building a Watershed Information System for the Campo de Cartagena basin (Spain) integrating hydrological modeling and remote sensing. FutureWater report 125

Hunink, J. E., Baille, A., Olioso, A., García-Vila, M., Loukas, A., et al., 2013. Alpha-tests of the first prototype of the District Information System. Sustainable use of irrigation water in the Mediterranean (SIRRIMED – European FP7 project), Report D4.7.

Hunink, J. E., Baille, A., Olioso, A., García-Vila, M., Loukas, A., et al., 2013. Adaptations of the models and on the coupling of the crop model and hydraulic model. Sustainable use of irrigation water in the Mediterranean (SIRRIMED – European FP7 project), Report D4.4.

Hunink, J.E., Immerzeel, W.W., Droogers, P. 2013. Análisis de Patrones Espaciales de Precipitación en la Provincia de Tungurahua. FutureWater Report 125.

Droogers, P., **J.E. Hunink**. 2012. Assessment of Impact of Climate Change on Wheat in Armenia, Azerbaijan and Georgia. Report FutureWater 108.

Hunink, J.E., Baille, A., 2012. Remote sensing-based DSS for Sustainable Drought-adapted Irrigation Management. Final technical report for REDSIM project within "Halting Desertification in Europe programme of DG-ENV, European Commission.

Brandsma, J.E., Leuken, J., Droogers, P., **Hunink, J.E.,** Swart, A., Hoek, W. 2012, Correlation between C. burnetii Transmission Rates and Satellite Based Vegetation Indices. Report FutureWater 109.

Hunink, J. E., Baille, A., Olioso, A., García-Vila, M., et al., 2011. Models to be Implemented in the District Information Systems (DIS) and Watershed Information Systems (WIS). Sustainable use of irrigation water in the Mediterranean (SIRRIMED – European FP7 project),), Report D4.2 and D5.2.

Hunink, J.E., Droogers, P., 2011. Physiographical baseline survey for the Upper Tana catchment: erosion and sediment yield assessment. Report FutureWater 112

Hunink, J.E., P. Droogers. 2011. Climate Change Impact Assessment on Crop Production in Uzbekistan. World Bank Study on Reducing Vulnerability to Climate Change in Europe and Central Asia (ECA) Agricultural Systems. Report FutureWater 106.

Hunink, J.E., P. Droogers. 2011. Climate Change Impact Assessment on Crop Production in Albania. World Bank Study on Reducing Vulnerability to Climate Change in Europe and Central Asia (ECA) Agricultural Systems. Report FutureWater 105.

Droogers, P., **Hunink, J.E.**, Kauffman, S., van Lynden, G., 2011. Water Use and Demand in the Upper Tana, Catchment, Kenya – A Cost-Benefit Analysis using the Water and Evaluation and Planning Tool (WEAP). Green Water Credits Report 14, ISRIC – World Soil Information, Wageningen

Hunink, J.E., Immerzeel, W.W., Droogers, P., Kauffman, S., van Lynden, G., 2011. Impacts on Land Management Option in the Upper Tana, Kenya, using the Soil and Water Assessment Tool – SWAT. Green Water Credits Report 10, ISRIC – World Soil Information, Wageningen

Droogers, P., W. Terink, **J.E. 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.E. 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.

Hunink, J.E., 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.

Hunink, J.E., T. Veenstra, P. Droogers, W. van der Hoek, 2010. Het belang van lokale omgevingsfactoren voor de verspreiding van Q-koorts bij de mens. Bodem, nummer 4, augustus 2010

Hunink, J.E., T. Veenstra, W. van der Hoek, P. Droogers, 2010. Q fever transmission to humans and local environmental conditions. FutureWater rapport 90. FutureWater, Wageningen.

Hunink, J.E., W.W. Immerzeel, P. Droogers, 2009. Green Water Credits for the Upper Tana Basin, Kenya. Phase II - Pilot Operations: Biophysical assessment using SWAT. Report FutureWater: 84