

## Curriculum Vitae

Name: A. Kaune, PhD  
 First Name: Alexander  
 Date of Birth: 10 October 1983  
 Nationality: German and Costa Rican  
 Main Disciplines: Hydrology, Risk analysis, Water management, Irrigation & Drainage, Project management  
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### Key Qualifications

Alexander Kaune (PhD) is an Agro-hydrologist with over ten years of experience in climate, water & agriculture. He is experienced in developing and managing projects for hydrological assessment, risk analysis, land-crop suitability evaluation, and irrigation & drainage advice using numerical prediction tools, earth observations (e.g. satellite-based data) and field measurements (e.g. drone-based data). Trained as an Agricultural Engineer and as a Hydrologist, he is skilled in integrating large datasets, and using hydrological models and crop growth models to solve complex problems in water resources management to support water allocation decisions at different temporal and spatial scales (e.g. country, basin, and agricultural system). Expert in soil-water-plant dynamics and interventions to enhance sustainable food production and reduce environmental impacts. Alexander has worked as a researcher/consultant in international projects with case studies around the world, including Colombia, Costa Rica, Angola, Mozambique, Iran, Georgia, Australia, Vietnam, Nepal, Ethiopia and Spain.

### Educational Background

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| 2014 – 2019 | PhD in Hydrology & Water Resources Management, Wageningen University & Research, and IHE-Delft Institute for Water Education, the Netherlands. The value of using hydrological datasets for water allocation decisions: earth observations, hydrological models, and seasonal forecasts. |
| 2011 – 2013 | MSc Water Science and Engineering – specialization in Hydraulic Engineering – Land and Water Development, IHE-Delft Institute for Water Education, the Netherlands. Thesis: Surface water assessment and supply reliability: The Pamplonita basin, Colombia and Venezuela.               |
| 2010        | Lic Agricultural Engineering (BSc + 1 year), Engineering Department, Universidad de Costa Rica, Costa Rica. Thesis: Design and construction of a rain simulator for quantifying physical-erosive properties of raindrops.  |
| 2002 – 2007 | BSc Agricultural Engineering, Engineering Department, Universidad de Costa Rica, Costa Rica. Subjects: Hydrology, Hydraulics, Irrigation & Drainage, Erosion control.  |

### Professional Experience

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| 2018 – present | Agro-hydrologist, FutureWater, Wageningen, the Netherlands.  |
| 2014 – 2018    | Researcher, Earth2Observe Project (Global Earth Observation for Integrated Water Resource Assessment), IHE-Delft Institute for Water Education, the Netherlands. |

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| 2011 - 2014 | Irrigation Engineer Specialist, National Service of Groundwater, Irrigation and Drainage, SENARA (Government institution), Costa Rica. |
| 2010        | Assistant Lecturer, Universidad de Costa Rica and Universidad Latina, Costa Rica.  |
| 2008 - 2010 | Project Engineer, Durman an Aliaxis Company (Engineering consultancy and sales), Costa Rica.   |

## Overseas Professional Experience

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| Resident:        | Netherlands (3 years), Costa Rica (6 years), Colombia (1 year), Australia (2 months) |
| As non-resident: | Angola, Mozambique, Iran, Spain, Thailand, Austria.                                  |

## Selection of Assignments and Projects

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| 2019 – present | MavoDiami project, Angola. Improving sustainable food and income security for farmers in Angola providing crop-land suitability, irrigation advice and risk analysis.   |
| 2019 – present | FAO Real Water Savings, Asia. Tool, manual, and training development to assess real water savings from field to basin scale.  |
| 2019 – present | Apsan-Vale project: Technical meetings and advice in Mozambique. Crop growth modelling in three regions in Mozambique.  |
| 2019           | Glacio-hydrological Assessment for Hydropower, in several river basins in Georgia.  |
| 2018 - 2019    | Remote Sensing for Agriculture Land Suitability Assessment in Angola. Development and application of remote-sensing based products that support planning and monitoring of agricultural development, and the assessment of agricultural areas for selected crops.               |
| 2018 - 2019    | Feasibility study: SMART-WADI. SMART WAter Decisions for Iran. To provide up-to-date information and advice on water productivity, irrigation and farm management in Iran using remote sensing and drone technology.  |
| 2014 - 2018    | Researcher in the European FP7 project EARTH2OBSERVE, on global earth observations for local water resources assessment (Colombia, Australia, and Costa Rica).  |
| 2013 - 2014    | Development of a maintenance and operation plan for a large irrigation district in Costa Rica (25,000 hectares, Arenal-Tempisque Irrigation District, DRAT), to enhance water supply for agricultural production. Assessment of water availability and crop water requirements. |
| 2011           | Hydraulic design and budget estimation for open canals and irrigation structures in the Arenal-Tempisque Irrigation District, DRAT, Costa Rica. Main project: Water supply from the Cañas River to the South Canal.   |
| 2010           | Implementation support of a new academic curricula for Agricultural Engineering in the Universidad de Costa Rica.   |
| 2010           | Development of lectures in hydrology, hydraulic engineering, irrigation system design and river basin management in the Universidad de Costa Rica.  |
| 2009           | Technical consultant in PVC and CPVC pipelines for water supply and fire sprinkler systems in Costa Rica. Main project: J.W. Marriot Hotel, Pinilla, Guanacaste.  |

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| 2008 | Design, budgeting and installation of pressurized water supply systems in construction and irrigation projects in Costa Rica. Main project: Sprinkler system for ornamental plants in greenhouses, Limón, Costa Rica. |
| 2008 | Internship in Durman Esquivel: Evaluating the operation of a pressurized irrigation system for pineapple in Costa Rica.   |

## Selection of Technical Reports and Other Publications

- **A. Kaune**, Van Opstal, J.D., 2020. APSAN Vale – Water Productivity Technical Report. FutureWater Report 195.
- **A. Kaune**, G.W.H. Simons, S. Pareeth, P. Karimi, M. Shaffei., 2019. SMART-WADI: SMART Water Decisions in Iran. FutureWater Report 185.
- 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.
- **A. Kaune**, C. Nolet, A.F. Lutz., 2019. Glacio-hydrological Assessment for Hydropower, Mestiachala River, Georgia. FutureWater Report 188.
- Simons, G.W.H., K. Viergever, **A. Kaune**, 2019. Remote Sensing for Land Suitability Assessment in Angola. FutureWater Report 181.
- **A. Kaune**, 2019. The value of using hydrological datasets for water allocation decisions: earth observations, hydrological models, and seasonal forecasts, PhD dissertation, Wageningen University, <https://doi.org/10.18174/479159>.
- **A. Kaune**, Chowdhury, F., Werner, M., and Bennett, J., 2020. The benefit of using an ensemble of seasonal streamflow forecasts in water allocation decisions, Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2020-60>, in review, 2020.
- **A. Kaune**, Werner, M., López López, P., Rodríguez, E., Karimi, P., and de Fraiture, C., 2019. Can global precipitation datasets benefit the estimation of the area to be cropped in irrigated agriculture?, Hydrol. Earth Syst. Sci., 23, 2351–2368, <https://doi.org/10.5194/hess-23-2351-2019>, 2019.
- **A. Kaune**, P. López, A. Gevaert, T. Veldkamp, M. Werner, C. de Fraiture, 2020. The benefit of using an ensemble of global hydrological models in surface water availability for irrigation area planning, Water Resources Management, accepted for publication.
- **A. Kaune**, M. Werner, E. Rodríguez, P. Karimi, C. de Fraiture, 2017. A novel tool to assess available hydrological information and the occurrence of sub-optimal water allocation decisions in large irrigation districts, Agricultural Water Management, Volume 191, September 2017, Pages 229-238, <https://doi.org/10.1016/j.agwat.2017.06.013>.
- E. Rodríguez, I. Sánchez, N. Duque, P. Arboleda, C. Vega, D. Zamora, P. López, **A. Kaune**, M. Werner, C. García, S. Burke, 2019. Combined Use of Local and Global Hydro Meteorological Data with Hydrological Models for Water Resources Management in the Magdalena - Cauca Macro Basin – Colombia, Water Resources Management, <https://doi.org/10.1007/s11269-019-02236-5>.

## Language Skills

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|------------|------------------------------|
| Spanish:   | Mother tongue                |
| English:   | Fluent in writing and speech |
| German:    | Fluent in writing and speech |
| Dutch:     | Elementary                   |
| Portuguese | Elementary                   |

## Computer Skills

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| Simulation models: | SPHY, AquaCrop, Dynamic Water Balance Model (DWBM), HEC-HMS, HEC-RAS |
| GIS:               | ArcGIS, QGIS   |

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| Programming:       | Python, R, VBA     |
| Standard software: | MS Office          |
| Others:            | AutoCad, HCanales. |