



Water and Development Research Group

WDRG is a multi- and interdisciplinary research group, working rigorously on various aspects of water. Our research themes vary from "water for food" to the "role of power and politics in water management". WDRG has a strong modeling knowledge on big data and spatial analysis from local to global scale.

New publications

A. J. Horton et al. (2020)
Flood severity along the Usumacinta River, Mexico: Identifying the anthropogenic signature of tropical forest conversion
 Journal of Hydrology X, 10, 100072

We examine the impact tropical deforestation has had on historic discharge and flood patterns within Mexico's largest river basin, the Grijalva-Usumacinta, and use a distributed hydrological model to estimate future impact. We find that deforestation alone has increased the 10-year return peak flow by 25%, and continued deforestation could raise it a further 18%.

M. Porkka et al. (2021)
Is wetter better? Exploring agriculturally-relevant rainfall characteristics over four decades in the Sahel
 Environmental Research Letters, 16, 035002

The paper found that although annual rainfall has increased in much of the Sahel since the drought of the '70s and '80s, agriculturally-relevant rainfall characteristics, like rainy season duration and occurrence of dry spells during vulnerable crop growth stages, have improved only in scattered areas across the region.

M. Taka et al. (2021)
The potential of water security in leveraging Agenda 2030
 One Earth 4, 1–11

The study examines how water security could be leveraged in implementing SDGs in an integrated manner. We found that improved water security had a positive impact on other SDGs in the majority of reviewed publications.

T. Falkeland et al. (2021)
Grain export restrictions during COVID-19 risk food insecurity in many low- and middle-income countries
 Nature Food 2, p11–14

C. Kuenzer et al. (2020)
Profiling resilience and adaptation in mega deltas: A comparative assessment of the Mekong, Yellow, Yangtze, and Rhine deltas
 Ocean & Coastal Management, 198, 105362

Matti Kummu appointed as associate professor

Matti Kummu was appointed as associate professor in early 2021. Sharing Prof. Kummu's long-term colleagues' descriptions, a recent [news](#) piece writes that he "*has had an impact on not just on research, but also on his colleagues as a researcher, teacher and mentor in the field of water resources.*" To celebrate Aalto's new tenured professors the university publishes [a series of Installation Talks](#). Find Prof. Matti Kummu's full talk [YouTube](#).

Grants

Academy of Finland funding for Prof. Kummu for studying "solutions and recommendations for improving food security in the short and long term". The project is run jointly with the Natural Resources Institute Finland. Read more [here](#).

WDRG in [AgriSCALE](#) project funded by Erasmus+ Higher Education Capacity-Building programme. The project is a joint initiative for reforming agri-entrepreneurship education in Sub-Saharan Africa

New people



Post Doc
Irina Mancheva



Visiting PhD researcher
Xiaomeng Zhang



MSc thesis worker
Maria Kosonen



MSc thesis worker
Aino Ahvo



MSc thesis worker
Eelis Hemberg

Latest blog posts

- [Providing water in a country dealing with crises left and right](#)
- [In drought-prone Sahel, rain still remains a gift only few farmers can enjoy](#)
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- [The Art and Science of Asking Questions](#)
- [How Could Finland Positively Impact the Global Food System?](#)
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