



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.

Publications

Heikonen, S., ..., Heino, M. (2023). [Modeling the drivers of eutrophication in Finland with a machine learning approach](#). *Ecosphere*, 14(5), e4522. doi: 10.1002/ecs2.4522

Kallio, M. (2023). [Ribbon map of the Mekong \(2023-04-29\)](#). Zenodo. doi: 10.5281/zenodo.7878979

Blume-Werry, G., ..., Kummu, M. et al. (2023). [Arctic rooting depth distribution influences modelled carbon emissions but cannot be inferred from aboveground vegetation type](#). *New Phytologist*. doi: 10.1111/nph.18998

Latest blog post

[A digital map for soil fertility assessment in West Africa](#)

Ozias Hounkpatin briefly presents a case study on Benin republic to show how soil property map developed. The result shows that most of the agricultural lands of Benin belong to the low fertility class, presenting severe limitations for cropping.

Conferences

[European Geosciences Union \(EGU\)](#) in April 2023

- Varis, O., and Keskinen, M. [Population at water risk in world's international river basins](#). doi: 10.5194/egusphere-egu23-6341
- Sandström, V., Kummu, M. et al. [The potential to increase resilience by replacing feed imports with domestic food system by-products](#). doi: 10.5194/egusphere-egu23-11440
- Heikonen, S., Heino, M., Jalava, M., Kummu, M. [Climate change alters the global diversity of food crops](#). doi: 10.5194/egusphere-egu23-6115

[Sustainability Science Days](#) in May 2023

- Sandström, V., Kummu, M. et al. [Dependency on imported agricultural inputs – global trends from the recent past](#) in the session [Unpacking the Scientific Knowledge Networks for Sustainability Transformation in Agri-Food Systems](#)
- Julia Sundman and Matleena Muhonen host [EDUCase Network Creative Workshop](#), and Daniel Chrisendo was one of the chat panelists.

People

Sina Masoumzadeh Sayyar and Sofija Djukanovic both moved to WDRG from the Water and Wastewater Engineering Team due to the change of employment of their former supervisor Prof. Riku Vahala.

Sina Masoumzadeh Sayyar, a PhD researcher working on asset management and wastewater networks under the supervision of Associate Professor Matti Kummu. His main research interests lie in urban water systems design, monitoring, and management.



Sofija Djukanovic, a PhD researcher focusing on drinking waters under the supervision of Professor Olli Varis. Her research is about the target level of natural organic matter in drinking water. Her background is primarily chemistry, then turned to environmental engineering.

News

[Sustainable Global Technologies \(SGT\) Studio](#) - Final Event 2023 was successfully held in 29 May. SGT Studio course was led by Olli Varis and coordinated by Matleena Muhonen. Julia Sundman, Daniel Chrisendo, Johannes Piipponen, and Anup Shrestha were mentors of all five interdisciplinary and multicultural projects carried out with partners in Zambia, Bhutan, Brazil, and Mexico. The topics included refugees' well-being and integration, circular food systems, hazard mitigation, resiliency of wastewater treatment facilities and indigenous communities.

Next newsletter in September!

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