



# 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

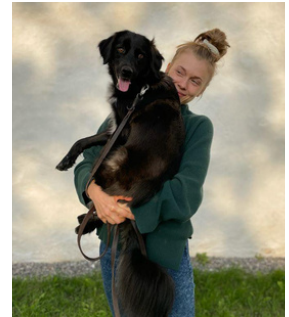
- Ahvo, A., Heino, M., Sandström, V., Chrisendo, D., Jalava, M., Kummumäki, M. (2023). **Agricultural input shocks affect crop yields more in the high-yielding areas of the world.** *Nature Food*, 4, 1037–1046.
- Ahopelto, L., Sojamo, S., ..., Keskinen, M. (2023). **Water governance for water security: analysing institutional strengths and challenges in Finland.** *International Journal of Water Resources Development*, 1-21.
- Juvakoski, A., ..., Mulas, M., ..., Vahala, R., Varis, O., et al. (2023). **Evidence of waste management impacting severe diarrhea prevalence more than WASH: An exhaustive analysis with Brazilian municipal-level data.** *Water Research*, 247, 120805.
- Lai, E. N., ..., Virkki, V., Porkka, M., et al. (2023). **Root zone soil moisture in over 25 % of global land permanently beyond pre-industrial variability as early as 2050 without climate policy.** *Hydrology and Earth System Sciences*, 27(21), 3999-4018.
- Wang, X., ..., Zhao, D. (2023). **Spatiotemporal changes of forest vegetation after the implementation of a natural forest protection project and underlying driving factors: Case study of a typical natural secondary forest area in the Loess Plateau.** *Ecological Engineering*, 199, 107164.

## Projects

- Postdoc researcher **Josias Láng-Ritter** received **Nessling Foundation’s grant** (73 365 euros in total). This funded project is about the use of open information and tools in the management of transboundary water bodies (OpenWaters).
- Associate Professor **Marko Keskinen** and Assistant Professor **Eliisa Lotsari** are the principal investigators in the **Digital Waters Flagship**. More information can be found [here](#).

## People

**Essi Huotari**, a new PhD researcher, is working on the co-creation process of identifying transformative policy changes in Finland that could potentially promote sustainability transformation in a just way. Her background is in Environmental Politics and Change.



## News

- The Royal Swedish Academy of Sciences and Stockholm International Water Institute invited Distinguished Professor **Olli Varis** to the nomination committee of the Stockholm International Water Prize (nicknamed often as the “Nobel Prize for Water”) for the period 2024-2026.
- Associate Professor **Marko Keskinen** was invited to the Finnish Independence Day reception hosted by the president of Finland, which was a great recognition for the water industry as well as research and education.
- Associate Professor **Matti Kummumäki** was interviewed by Yle, where he discussed the future of cocoa cultivation and the significant impact climate change is having on this vital agricultural sector. [News story](#) in Finnish.
- Distinguished Professor **Olli Varis** acted as an opponent of the Doctoral Dissertation at the State University of Groningen, the Netherlands, on 9 January 2024. The title of the Dissertation was *Human-Water-GHG Nexus in China*, and it was done under the supervision of Prof. **Klaus Hubacek**.





# 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.

## Events - Everyone is welcome to join!

- Public examination of doctoral researcher **Meeri Karvinen**'s dissertation *Supporting agency for sustainability: Exploring the contributions of universities and workplaces to the sustainability competencies and agency of engineering graduates*, will be held on Friday 16th February at 12.00 in Otakaari 1, lecture hall A215.
- Public examination of doctoral researcher **Lauri Ahopelto**'s dissertation *Drought in Water Abundant Finland - Data and Tools for Drought Management*, will be held on Friday 8th March at 12.00 in Otakaari 1, lecture hall E.

## Recap

- On 2nd February, doctoral researcher **Anni Juvakoski** successfully defended her dissertation, *Out of the WASH Box – Towards a Wider Contextualization of the Water, Sanitation, and Hygiene Sector*, in Aalto University (Doctoral Programme in Water and Environmental Engineering). Her dissertation is available [here](#).

## Research visits

- Distinguished Professor **Olli Varis** visited the International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria, on 10-15 November 2023, for the Governing Council activities.
- Postdoc researcher **Dandan Zhao** visited the Water-Energy-Food-Land nexus research group in Technische Universität München (TUM), Germany. The research topic was the role of equality on promoting SDGs through leveraging synergies and tackling trade-offs. This visit was funded by Aalto-TUM cooperative funding.
- Doctoral researchers **Julia Sundman** and **Xiaoqi Feng** kicked off their collaboration with researchers from Swedish and Danish universities with visits to KTH Royal Institute of Technology and Chalmers (Sweden) late October. Doctoral researcher **Xiaoqi Feng** traveled again in December to interview teachers at Chalmers.

## Conferences

- **Finland Pavilion of the COP28 climate conference, Dubai, 10th October 2023**  
Postdoc researcher **Vilma Sandström** and Staff Scientist **Mika Jalava**: Threats and opportunities for global food systems. Presentations can be found [here](#).
- **International Workshop on Geography and Sustainability 2023, Beijing, China, 26-29 October 2023**  
Distinguished Professor **Olli Varis**: Similarity analysis of world's river basins vis-à-vis socio-ecological resilience to ten major water related risks.
- **8th International Water Association specialist conference on Natural Organic Matter Boksburg, 3rd - 6th December 2023**  
Doctoral researcher **Sofija Djukanovic**: Unravelling the molecular characteristics of bioavailable organic matter. The [abstract](#) can be found on Page 138.

**Next newsletter in April!**