



# 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.

## People

[Xiaoqi Feng](#) is a PhD Candidate researching engineering education under the supervision of Associate Professor Marko Keskinen. Her research interests include interdisciplinary pedagogies, collaborative teaching and learning, as well as project/problem-based learning.



[Anni Juvakoski](#) started as a part-time academic coordinator in the Sustainable Global Technologies Programme. She will coordinate the Sustainable Built Environment course and help organizing the Sustainable Global Technologies Studio course. With the rest of her time, she continues with research.

## Funding

Our postdoc researcher [Miina Porkka](#) received ERC starting grant successfully, her AQUAGUARD project investigates how human actions modify the water cycle and how these changes affect life on Earth. More information [here](#).



Our associate professor [Marko Keskinen](#) has been awarded a major research grant by the Strategic Research Council of Finland. This project will study the governance of sustainability transformation in Finland, with focus on the legal systems. Marko will be recruiting a doctoral researcher and a postdoc for the project, get in touch with him if you got interested!

[Vili Virkki](#) was funded by Academy of Finland to participate in the [Young Scientists Summer Program](#) hosted by the International Institute for Applied Systems Analysis (IIASA) in Austria in this summer. The program involves working on a research project in collaboration with IIASA staff. Vili's work this summer was about attributing streamflow change to its human drivers using machine learning methods.



## Awards

[Xiaoqi Feng](#), [Julia Sundman](#), [Maija Taka](#), [Hanna Aarnio](#), [Marko Keskinen](#) and [Olli Varis](#) won the Best Paper Award at the [SEFI Conference](#).



Our postdoc researcher [Marko Kallio](#) won the [British Cartography Society Avenza Award](#) for best electronic mapping and was selected the best out of the winners of all competition categories with his [ribbon map of the Mekong River](#). Read more [here](#).



## News

Doctoral student [Sara Heikonen](#) was interviewed by [YLE](#) on the impacts of climate change on rice production and the potential adaptation options. [News story in Finnish](#).

## Blog posts

[“When your values clash with your work: How to teach something that does not convince you?”](#)



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## Publications

- Niva, V. et al. (2023). [World’s human migration patterns in 2000–2019 unveiled by high-resolution data](#). *Nature Human Behaviour*, 1-15.
- Keskinen, M. et al. [Trust in Transboundary Waters: Identifying Trust-Building in Water Diplomacy Literature](#). *Water Alternatives*, 16(3), 949-977
- Chrisendo, D. et al. (2023). [Socioeconomic factors of global food loss](#). *Agriculture & Food Security*, 12(1), 23.
- Banafa, T. et al. (2023). [Social network analysis of EU flood risk management plans: Case Finland](#). *Journal of Flood Risk Management*, e12945.
- Richardson, K... Kumm, M...Porkka, M...Virkki, V... et al. (2023). [Earth beyond six of nine planetary boundaries](#). *Science Advances*, 9(37), eadh2458.
- Ahopelto, L., Kallio, M... Keskinen, M. (2023). [Drought hazard and annual precipitation predicted to increase in the Sirppujoki river basin, Finland](#). *Climate Services*, 31, 100400.
- Toivettula, A., Varis, O., Vahala, R., Juvakoski, A. (2023). [Making waves: Mental health impacts of inadequate drinking water services—From sidenote to research focus](#). *Water Research*, 120335.
- Jämsä, J., Sandström, V. et al. (2023). [Environmental communication for expert audiences-experimenting three approaches](#). *Applied Environmental Education & Communication*, 1-15.
- Zheng, H... Zhao, D... et al. (2023). [Leveraging opportunity of low carbon transition by super-emitter cities in China](#). *Science Bulletin*.08.016
- Salami, D. et al. (2023). [Water quality analysis using mmWave radars](#). In 2023 IEEE International Conference on Pervasive Computing and Communications Workshops (pp. 412-415)

## Data sets

- Explore global migration data from WDRG website: <https://wdrg.aalto.fi/global-net-migration-explorer/>

## Conferences

### [SEFI conference on Sustainability in Engineering Education in Dublin](#).

- **Julia Sundman & Xiaoqi Feng:** To withdraw, investigate, negotiate or integrate? Students’ coping strategies with disorienting dilemmas in interdisciplinary project courses
- **Majja Taka & Jaana Suviniitty:** From Rookies to Synthesis: Agile solutions for sustainable doctoral studies
- **Meeri Karvinen & Paula Schönach:** Impact of teacher training on enhancing sustainability integration into engineering education

### [XVIII World Water Congress 2023 in Peking](#).

- **Anni Juvakoski:** Evidence of waste management impacting severe diarrhea prevalence more than WASH: an exhaustive analysis with Brazilian municipal-level data.

### [11th international conference on industrial ecology \(ISIE 2023\) in the Netherlands](#)

- **Dandan Zhao:** Delivery of energy sustainability Applications of the “STAR” protocol to the Sustainable Development Goal 7 index and its interaction analysis

## Courses

[Sustainable Global Technologies Programme](#), ran under WDRG, kicked off its annual open lecture series “State of the World and Development” in September. The course hosts 10 expert lectures from the academia and field and started with presentations by Prof. [Matti Kumm](#) and [Member of Parliament, former Minister of Foreign Affairs Pekka Haavisto](#). Full course programme is [here](#).

**Next newsletter in January!**