



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

M. Heino et al. (2020)

A multi-model analysis of teleconnected crop yield variability in a range of cropping systems

Earth Syst. Dynam., 11, 113–128

Crop yields are influenced by climate oscillations in several important global crop-producing regions, and the largest impacts are generally observed in rainfed cropping systems.

F. Keuper et al. (2020)

Carbon loss from northern circumpolar permafrost soils amplified by rhizosphere priming

Nature Geoscience 13, 560–565

Priming effect (plant roots in soil stimulated microbial decomposition) alone can cause emission of 40 billion tonnes carbon from permafrost by 2100.

E. Borgomeo et al. (2020)

Impact of green water anomalies on global rainfed crop yields

Env. Res. Lett., *accepted*

Dry green water anomalies decrease rainfed crop yields worldwide, while agricultural production generally benefits from wet green water anomalies. This effect is intensified in arid climates and weakened in humid climates where extremely wet green water anomalies can lead to declines in crop yield.

T. Perälä et al. (2020)

Calibrating Expert Assessments Using Hierarchical Gaussian Process Models

Bayesian Anal. 15:4, 1251–1280

An approach to calibrate expert opinions with systematic biases by using Bayesian models and test data.

Blog posts:

- [What do entrepreneurship and doctoral studies have in common?](#)
- [Massive Open Online Course on governance for transboundary freshwater security](#)



How to build a more resilient Finnish food system?

The primary aim of this dissertation is to discover how Finland could positively impact on the global food system without weakening its own food system's trade-related resilience.

The focus is on the wise use of natural resources and different case studies were created for Finland: decreasing the imports and increasing the exports with utilising the domestic agricultural potential (land and water). Further, consumers' food preferences were studied to understand what motivates the Finnish citizen and how to implement the proposed changes.

Elina Lehtikoinen will defend her thesis "*Building a more resilient Finnish food system - From import dependence towards domestic natural resource use*" on 11 December at 12:00 in Zoom. Follow wdrg.aalto.fi/news for the link to attend the online public examination and for the link to the pdf version of the thesis.

Our new group activities

Due to the pandemic, we have adapted our group activities to the remote working situation, to improve work and well-being.

- **monthly nature walks** - in Otaniemi and Helsinki
- **weekly seminars** - to keep each other informed
- **online writing sessions** - to write together!



Photo by Dan Dan Zhao

Aalto University is now a partner of the [Universities Partnership for Water Cooperation and Diplomacy!](#)

Aalto Sustainability Talk on the importance of water on Sustainability & SDGs [see the talks here!](#)

