



Terrace rice fields in Yunnan Province, China. Photo by: J. Gao.

COUPLED HUMAN-WATER SYSTEMS

Studying the relationships between social and hydrological systems.



Research Areas

- Coupled human-natural systems and Food-Energy-Water-Ecosystem nexus;
- Land acquisitions, land use change and dietary diversity;
- Forced migration, armed conflicts, virtual water flows and food insecurity.

Regions

South Asia, Middle East, Sub saharan Africa, and the Global South more broadly.

Partners

University of Notre Dame; UC Berkeley; Stanford; University of Vermont; University of Delaware; Politecnico de Milano; VU Amsterdam; and University of Berne.

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Contribution to the WFSC

The Coupled Human-Water Systems Group at Eawag studies the relationships between social and hydrological systems within the nexus of food, water, energy and environmental security. Using modeling and analysis tools from the environmental-, social- and data-sciences, the group examines the unintended consequences of water management or land-use decisions, especially when their impacts are externalized to distant regions, vulnerable populations, or future generations. At a global level, their research has investigated the effect of transnational land acquisitions and irrigation infrastructure expansion, on local food security, water competition and biodiversity losses. At a more regional level, their work has focused on the allocation of transboundary waters and on the ramifications of armed conflicts and forced migration on food security through virtual water fluxes.



Dr. Marc Müller