

Insights into my dissertation

SGHL Nachwuchstagung 2021

Joana Eichenberger

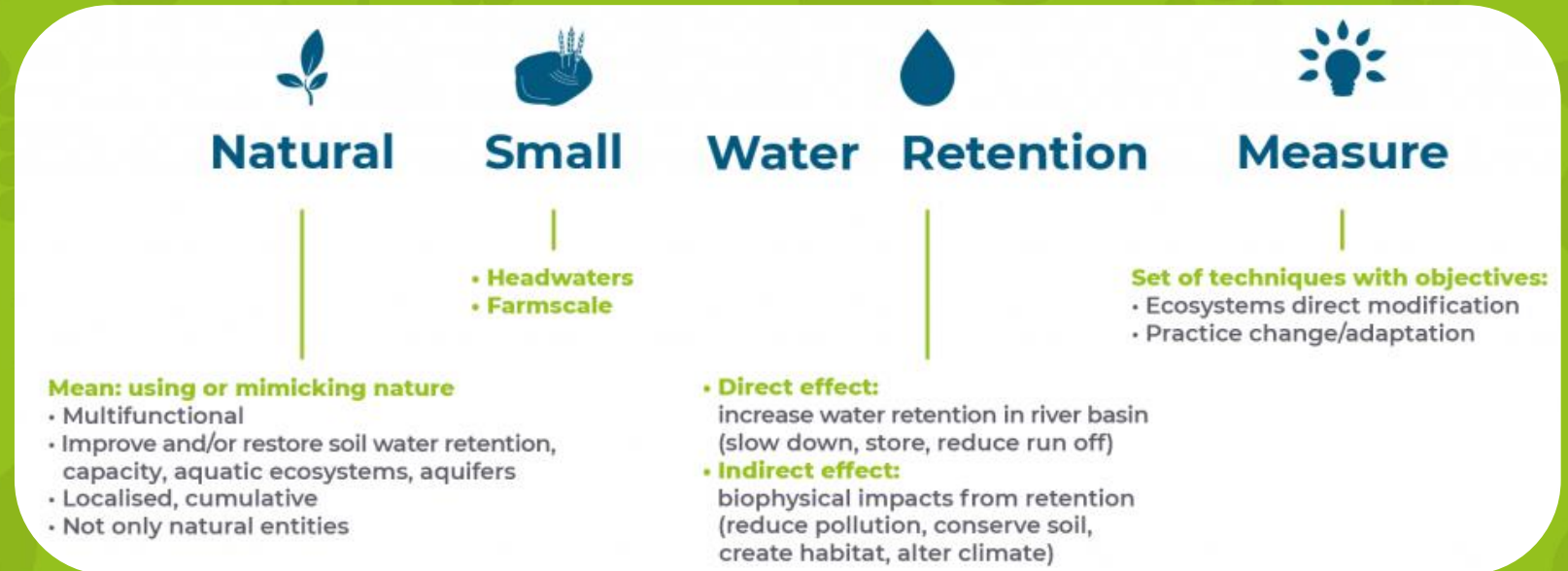
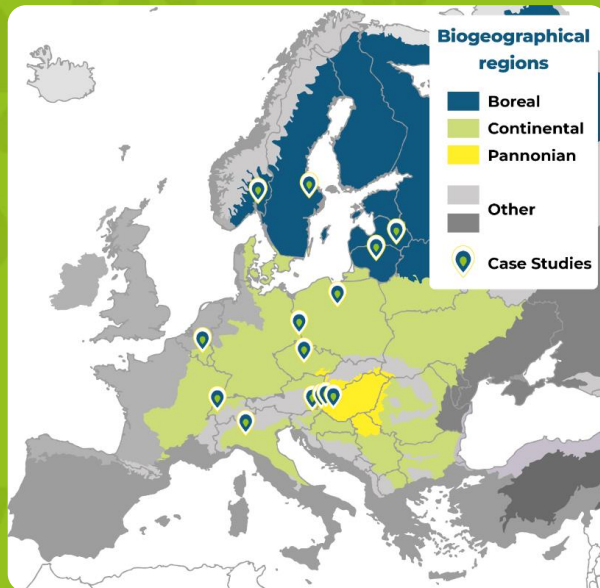
Center for Development and Environment (CDE), University of Bern

12/2020 – 11/2023 (2024?)

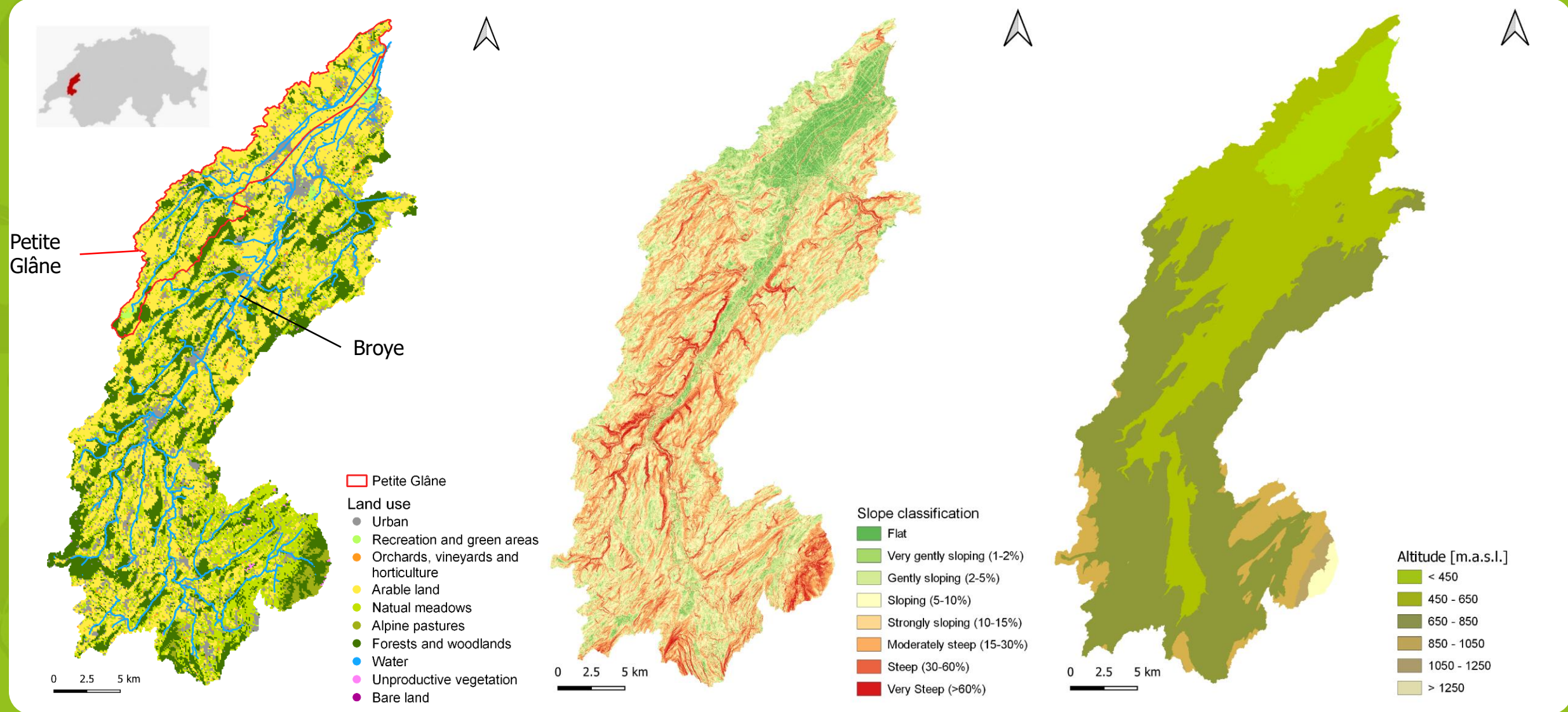
Supervisors: Dr. Tatenda Lemann (CDE) & Prof. Dr. Bettina Schaefli (GIUB)

Horizon 2020 Research & Innovation project OPTAIN

OPTimal strategies to retAIN and re-use water and nutrients in small agricultural catchments across different soil-climatic regions in Europe



Study area



I. Impacts of Natural and Small Water Retention Measures (NSWRMs) and their potential to adapt to climate change

Methodology:

- Identify suitable NSWRMs
 - Multi-Actor Reference Groups
 - Suitable for SWAT+
- Process-based environmental modelling with SWAT+
- Climate Change Scenarios

→ Strongly dependent on OPTAIN project progress

Paper: End of 2023

II. Impact of watershed size and DEM resolution on SWAT+ Calibration

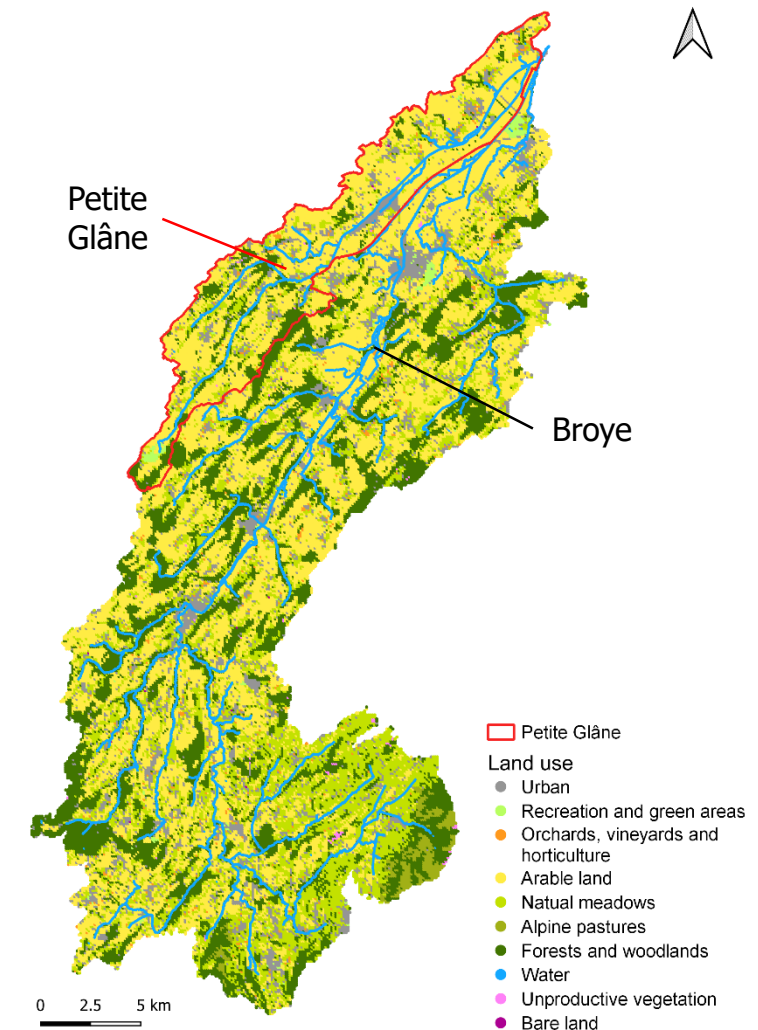
Watershed size: Petite Glâne (94km²) vs Broye (602km²)

Digital Elevation Model (DEM) resolution: 1 vs 25 m

→ Impacts on streamflow and water quality predictions?

→ New and little used SWAT+ (Bieger et al., 2016)

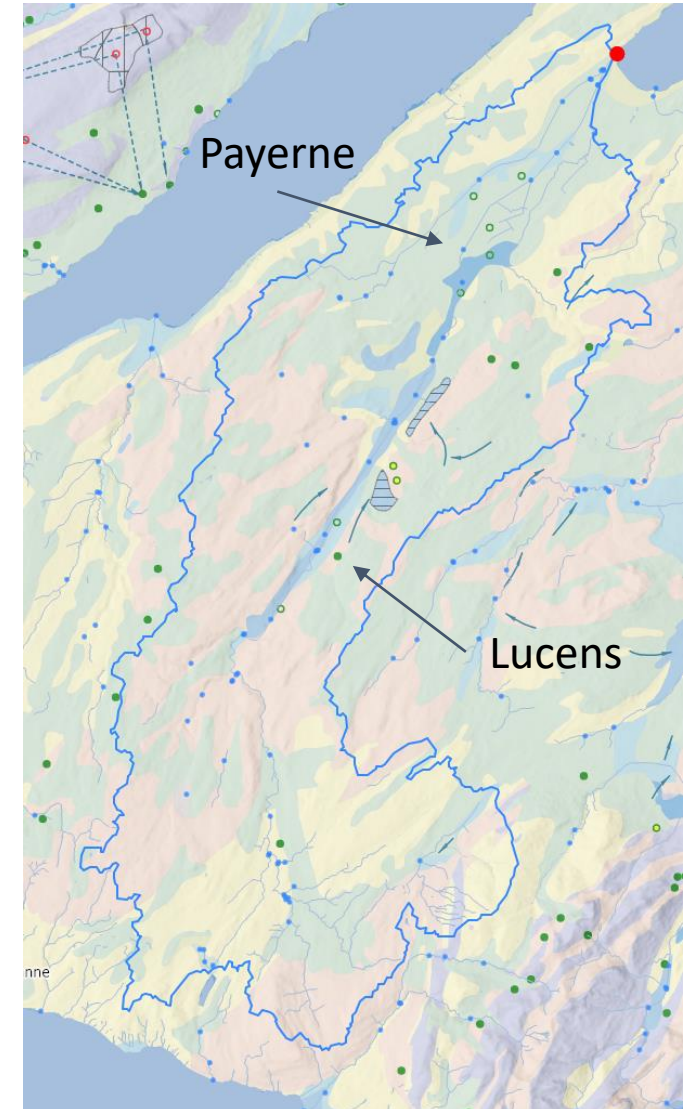
Paper: summer 2022



III. Performance of SWAT+ on streamflow-aquifer interaction

Methodology

- Modelling groundwater table with SWAT+, calibration and validation with data from FOEN NAQUA station Lucens - Grands Champs (6575)
 - Longitudinal and temporal analysis of the Broye water with Multiparameter Sonde
 - Integrate results of ongoing Master thesis
- Paper: Winter 2022/24



Thank you
for your
attention



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