„Optimal Strategies to Retain and Re-use Water and Nutrients in Small Agricultural Catchments across Different Soil-climatic Regions in Europe“ (OPTAIN)

Duration of the project: 01/09/2020 – 01/09/2025

The project has received funding from the Horizon 2020 programme: (https://ec.europa.eu/programmes/horizon2020/)

Project partners:

- Helmholtz-Centre for Environmental Research (UFZ), Germany
- University of Bern (UBERN), Switzerland
- Agroscope (WBF), Switzerland
- Centre for Agricultural Research, Hungarian Academy of Sciences (ATK), Hungary
- General Directorate of Water Management (OVF), Hungary
- Warsaw University of Life Sciences (WUL), Poland
- Institute of Technology and Life (ITP), Poland
- University of Ljubljana (UL), Slovenia
- Kmetijsko Gozdarska Zavod Maribor (KGZ MB), Slovenia
- Ghent University (UGent), Belgium
- Klaipeda University (KU), Lithuania
- Lithuanian Agricultural Advisory Service (LAAS), Lithuania
- University of Milan (UMIL), Italy
- Norwegian Institute of Bioeconomy Research (NIBIO), Norway
- Research Institute for Soil and Water Conservation (VUMOP), Czech Republic
- Daugavpils University (DU), Latvia
- Swedish University of Agricultural Sciences (SLU), Sweden
- Global Water Partnership Central and Eastern Europe (GWP CEE), Slovakia
- International Office for Water (OiEau), France
- Royal Haskoning DHV (RHDHV), The Netherlands
- Norwegian Institute for Water Research (NIVA), Norway

Project activities

The OPTAIN project is led by Helmholtz Centre for Environmental Research (UFZ, Germany). The project brings together 21 partners from 15 countries.

The aim of the project is to identify efficient techniques for the retention and reuse of water and nutrients in small agricultural catchments across Continental, Pannonian, and Boreal biogeographical regions of Europe and select NSWRMs (*Natural/Small Water Retention Measures*) at farm and catchment level and optimize their spatial allocation and combination, based on environmental and economic sustainability indicators. OPTAIN aims to increase acceptance and better implementation of natural, small, and underutilized retention measures by showing under which weather/climate conditions, on which scale (field/catchment), on which location in the catchment and in combination with which other measures NSWRMs perform best, considering environmental and socio-economic indicators.

Objectives of the project are:

1. Analysing current and future climate-change-related conflicts in water and nutrient management for a representative set of multi-actor case studies at farm and catchment level, as well as disentangling region specific constraints and opportunities of past, present, and novel NSWRMs in agriculture and water management.
2. Delivering an exhaustive catalogue of existing and further potentially relevant NSWRMs and tailoring environmental and economic indicators for their (quantitative) assessment.
3. Analysing ways of data collection to fulfil quantitative and qualitative input data needs of small catchment and farm-scale modelling and developing standardized guidelines for data compilation and storage, especially with respect to climate scenarios.
4. Setting up, enhancing, and applying models to evaluate the environmental and economic sustainability of NSWRMs at the farm and catchment level using the comprehensive set of relevant indicators and a standardized, protocol-based modelling approach across all case studies.
5. Identifying most effective implementation schemes for NSWRMs, including their combination and allocation and illustrating trade-offs and synergies among multiple objectives.
6. Synthesizing project outcomes and formulating general and case study specific recommendations for actors and policy makers and drawing implications of these options for policy and practice.
7. Building capacity and disseminating project results using a comprehensive training analysis, an interactive learning environment, and a variety of communication formats.

Lithuanian Agricultural Advisory Service (LAAS) in collaboration with Klaipeda University (KU) contribute to achievement of project objectives. They are responsible for tasks of different work packages such as gathering of information and analysis of local conditions important for implementation of NSWRMs, development of modelling protocols, assessment of effectiveness of on-site NSWRMs at field scale, assessment of effectiveness of SNWRMs at the catchment scale, provision and analysis of case studies and other.