# OPTAIN : Čechtický stream catchment [Czech Republic]

### Year of issue

2025

### Summary

The Cechticky stream catchment case study is located at the Central Bohemian Region of the Czech Republic. The catchment area is about 72 km², most of which is used as agricultural land (69%). Fifty nine percent of which is cropland. Čechtický stream catchment is a part of the Želivka river basin, which includes the Švihov drinking water reservoir. The reservoir is currently facing persistent problems with poor water quality linked to phosphorus, nitrogen and pesticide pollution. The area is also threatened by soil erosion in large fields as well as poor soil quality linked to dehumidification, soil compaction and increasing periods of drought. Tile drainage is common in the area and issues linked to technical failures, unintended runoff and poor quality are increasing.

OPTAIN aims to develop strategies and advanced tools for designing and evaluating the effectiveness of Natural Small Water Retention Measures taking into account the principles of their feasibility in small agricultural river basins in terms of increasing water accumulation and retention and improving water quality. Emphasis will be placed on measures on agricultural drainage systems in terms of possibility of their modernization, regulation, professional elimination.

## Photo Gallery





### Location

50.51159, 15.61694

### Project

OPTAIN

### National ID

CZ_06

### Sector

Urban

### Installation Date

2019

### Contact

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## Overview

### Country

Czechia

### NUTS2 Code

Jihovýchod

### Sponge measures implemented in the case study

Soakaways

Basins

Maintenance of forest cover in headwater areas

### Involved partners

| Authority type | Authority name | Authority role | Authority responsibility |
|---|---|---|---|
| Research institute / University | VUMOP (Research Institute for Soil and Water Conservation) | Determination of design details of the measure | Responsible |
| Farmers | Farmers and land owners | Implementation | Responsible |
| Other | State Land Office (Land Consolidation) | Initiation of the measure | Responsible |

## Site Information

### Climate Zone

Cool temperate moist

### Precipitation

700.00 mm

### Temperature (°C)

9.10 °C

### Evapotranspiration

519.00 mm

### Runoff

90.70 mm

### Elevation range

390 – 610 m a.s.l.

### Slope range

6-12%

### Soil type

Cambisols

### Groundwater level

1.2-4.6 meters

### Vegetation class

Arable land, Grassland, Forest.

## Design and Implementation

### Project scale

Meso

### Project area

72 km2

### Project area specifications

Land use change takes place in some designed and modelled NSWRMs. I.e. within Grassing of reacharge area and grassed waterways.

## Policy and Governance

### Policy targets

Erosion Control

Pollutants Removal

### Requirement directive

| Requirement directive | Specification |
|---|---|
| Water Framework Directive (WFD) 2000/60/EC | — |
| Other EU | Sustainable Use of Pesticides Directive – 2009/128/EC |
| Nitrate Directive (NiD) 91/676/EEC | — |

### Part of a wider plan

Oui

### Public consultation

Non

### Has contractual arrangements

Non

## Impacts and Monitoring

### Biophysical impacts: Water & Soil Quality

### WFD ecological status obj quantity

Moderate - to - Poor

## Lessons Learned

### Barriers

| Barrier type | Barrier role | Comments |
|---|---|---|
| Attitude of relevant stakeholders | Main barrier | Land user / land owner issues |
| Lacking financing sources | Main barrier | Measures maintenance costs |