OPTAIN : Upper Zglowiaczka River Basin [Poland]

Year of issue

2025

Summary

The case study is located in the north central Poland, in Kuyavian-Pomeranian province. The catchment area is about 150 km2. Due to highly fertile soils, arable land prevails (nearly 90%) in the catchment. The main crops are cereals, maize, oilseed rape, sugar beet, alfalfa, vegetables and herbal crops. An area covered by catch crops is increasing. Share of irrigated crops is small. The catchment is coping with an increasing water deficit for crop production and high nitrate loads and concentrations in water. These problems are amplified by low precipitation (annual average equals to 500 mm being the lowest in the country, 300 mm in the growing season) and the extensive drainage system (open ditches and subsurface tiles) that drains water excess in wet periods.The OPTAIN project will support the case study team with identifying and developing efficient land management strategies and small technical solutions to improve the soils’ infiltration and water holding capacities as well as its capacity to filter, buffer and transform pollutants.

Photo Gallery



Location

52.59696, 18.72744

Project

OPTAIN

National ID

PL_04

Sector

Agriculture

Implementation status

Modeled

Contact

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Overview

Location of the project

Central Poland, Kuyavian-Pomeranian province, Radziejów county (predominantly)

Country

Poland

NUTS2 Code

Kujawsko-Pomorskie

Sponge measures implemented in the case study

Buffer strips and hedges

Subsoiling

Objectives

Potentially: Increase of knowledge and awarness on low water resources and quality problems and measures possible to implement.

Involved partners

Authority type	Authority name	Authority role	Comments
Regional / sub-national water authority	State Water Holding- Polish Water	Implementation	potential

Authority type	Authority name	Authority role	Comments
NGO	water association of local farmers	Implementation	potential
Other	water law companies	Implementation	—

Documents

Upper Zglowiaczka - merged file.pdf (5.42 MB)

Site Information

Climate Zone

Cool temperate dry

Precipitation

500.00 mm

Temperature (°C)

9.20 °C

Evapotranspiration

620.00 mm

Runoff

50.00 mm

Elevation range

80-120 m a.s.l.

Slope range

flat (0 - 2%) to gentle (3 - 5%)

Soil type

Luvisols

Phaeozems

Groundwater level

Depend on the location: from 1.0 to 3.0 m; average 1.5-2.0 m

Vegetation class

Arable crops (mostly cereals, maize, sugar beet and vegetables)

WFD Ecological status

Moderate

WFD Chemical status

Failing to achieve good

Design and Implementation

Project scale

Meso

Project scale specifications

Meso-scale (catchment scale modelling); micro-scale (field modelling).

Project area

ca. 150 km2

Project area specifications

Rural area

Financing

Financing authorities

Authority name	Type of funding	Comments	Financing share
EU rural development funds	EU-funds: Rural development funds	Potentially	about 50%
—	National funds	Potentially	about 25%
Water associations contribution	Local funds	—	15%
private- farmer funds	Private funds	—	10%

Policy and Governance

Land ownership

The land is owned mainly by local farmers. The Zlowiaczka river basin is located in central Poland, western of Warsaw. The basin is characterized by a strong agricultural presence, with 90% of the land being arable, and only 4% forested.

Policy targets

Pollutants Removal

Oher Societal Benefits

Erosion Control

Increase Water Storage

Requirement directive

Requirement directive	Specification
Nitrate Directive (NiD) 91/676/EEC	
WFD-achievement of good chemical status	—

Part of a wider plan

No

Public consultation

Yes

Consultation activities

Activity stage	Activity type	Key issues	Comments
Design phase	MARG- Multi-actor reference group	Of the 19 informants interviewed, all agreed that policy mechanisms were not adapted to resolving the environmental and water quantity concerns of stakeholders.	Surveys were carried out with stakeholders to better understand barriers and challenges to implementing NWRM in the agricultural sector.

Has contractual arrangements

No

Impacts and Monitoring

Maintenance

Maintenance requirements

Water quality monitoring; Community engagement and education

Biophysical impacts: Water & Soil Quality

WFD ecological status obj quantity

Moderate: Some deviation from natural conditions, but functional. Some water bodies in the catchment are in poor/bad status.

Lessons Learned

Key lessons

Surveys were carried out with stakeholders to better understand barriers and challenges to implementing NWRM in the agricultural sector. Of the 19 informants interviewed, all agreed that policy mechanisms were not adapted to resolving the environmental and water quantity concerns of stakeholders.

Barriers

Barrier type	Barrier role	Comments
Lacking financing sources	Main barrier	Voluntary measures oftne not supported by subsidies
Other	Main barrier	Land ownership issues, administrative barrieres
Other	Main barrier	low benefit- cost

Drivers

Driver type	Driver role	Comments
Availability of subsidies	Main driver	Sufficient funding
Other	Main driver	Awareness of enironmental benefits and protection of soil quality and water resources (quantity and quality) in the region