OPTAIN : Kråkstad Catchment [Norway]

Year of issue

2025

Summary

The Kråkstadelva catchment, as case study area, is located within the Hobølelva watershed, located ca. 30km S-SE of Oslo, Norway. The area of the Kråkstadelva catchment is approximately 51 km². Agricultural land covers circa 43% of the catchment (22km²) and it is dominated by cereal production. Forest covers ca. 45% of the catchment. Heavy clay soils dominate in the area (up to 80% of clay content). Mean annual temperature is 5.3°C and average annual precipitation is ca. 864 mm. Floods of varied magnitude occur frequently in the catchment, typically during spring snow melt and autumn rainstorms. The main challenge in the area is water quality (incl. high phosphorus pollution) and soil erosion (incl. riverbank erosion and quick-clay landslides). There is already high focus on environmental mitigation measures, for example reduced tillage (no tillage in autumn), buffer zones (grassed bufferzones, in addition to natural buffer zones, in cropland along streams and lakes), grass-covered water ways, constructed wetlands and the use of catch-crops.

Photo Gallery



Project

OPTAIN

National ID

NO_01

Sector

Hydromorphology

Implementation status

Modeled

Contact

Nibio, Division of Environment and Natural Resources

Overview

Location of the project

Kråkstad catchment

Country

Norway

NUTS2 Code

Viken

Sponge measures implemented in the case study

Ponds and scrapes

Buffer strips and hedges

Swales

Wetland restoration and management

Minimum tillage

Site Information

Climate Zone

Cool temperate moist

Precipitation

800.00 mm

Temperature (°C)

5.30 °C

Runoff

4.70 mm

Elevation range

50 - 300 m a.s.l.

Slope range

Various as we model whole catchment

Soil type

Stagnosols

Vegetation class

Agricultural land covers around 43% of the catchment (22km²) and is dominated by cereal production. Forest covers around 45% of the catchment.

WFD Ecological status

Moderate

WFD Chemical status

Failing to achieve good

Design and Implementation

Project scale

Meso

Project scale specifications

Catchment scale modeling

Project area

51 km2

Project area specifications

Agricultural land covers ca. 43% of the catchment (22km²) and it is dominated by cereal production. Forest covers ca. 45% of the catchment.

Policy and Governance

Policy description

Local involvement has been extensive since around 1990 as catchment has been used as a study site in many projects, e.g., EU FP7 Refresh, EuroHarp, H2020 Recare). NIBIO has arranged many workshops with stakeholders of this catchment:
- Farmers and land owners;
- Water boards: local (for the catchment) and regional (for the river basin of Glomma);
- Municipalities;
- Boaters, canoes (mainly in the lake), local communities;
- Drinking water supply company (MOVAR);
- Environmentalists (f.ex., SABIMA);
- Hunting and fishing associations;
- Tourist association (Turistforeningen);etc.

Policy targets

Erosion Control

Peak-flow reduction

Pollutants Removal

Improved Biodiversity

Requirement directive

Requirement directive	Specification
Nitrate Directive (NiD) 91/676/EEC	NOTE: we do not follow this directives directly in Norway, but our national environmental targets are in agreement with EU directives
Water Framework Directive (WFD) 2000/60/EC	NOTE: we do not follow this directives directly in Norway, but our national environmental targets are in agreement with EU directives

Part of a wider plan

Oui

Wider plan

Wider plan focus	Name
Agriculture	Common Agriculture Policy

Public consultation

Oui

Consultation activities

Activity stage	Activity type	Comments
Screening phase	MARGs workshops	NIBIO has arranged many workshops with stakeholders in the case study catchment: - Farmers and land owners; - Water boards: local (for the catchment) and regional (for the river basin of Glomma); - Municipalities; - Boaters, canoes (mainly in the lake), local communities; - Hunting and fishing associations; - Tourist association (Turistforeningen);etc.

Has contractual arrangements

Non

Sources

Sources

AdaptaN II - Integrated approaches of the MoravianSilesian Region landscape to climate change adaptation.

Report NIBIO activities – Part 1: Mitigation measures.