Hydrological restoration through drain removal, ditch infill, and reduced water abstraction in Aa dal Noord, Netherlands

Year of issue

2026

Summary

Sponge Scapes case study NL 02

Regional Water Authority Aa and Maas provides a case study in their management area that is located in the wider river basin of the Meuse in south-east of the Netherlands, in the eastern part of the southern province of Brabant in the Netherlands. The area is charactierized by intensive agriculture (crops and livestock) and extensive artificial drainage of agricultural land has been carried out because excessively wet soils are more difficult for farmers to access and cultivate. At the same time the water system is also used to bring water to the agricultural fields from the Meuse river in periods of droughts and original water courses have been heavily modified to provide an efficient network of drainage and water supply, causing challenges for aquatic and riparian ecosystems. Combined sponge measures are implemented with insights from local stakeholders to increase the water retention of the landscape.

Photo Gallery



Location

51.3645, 5.5357

Project

SpongeScapes

Sector

Agriculture

Implementation status

Planned

Overview

Location of the project

The Aa and Maas catchment (15 km2) is located in the wider river basin of the Meuse in south-east of the Netherlands, in the eastern part of the southern province of Brabant in the Netherlands. It is a agricultural province (crops and livestock). In this agricultural catchment area, as elsewhere in Europe, extensive artificial drainage of agricultural land has been carried out because excessively wet soils are more difficult for farmers to access and cultivate. But this in turns has led to a loss of storage capacity in the soils.

Country

Netherlands

NUTS2 Code

Noord-Brabant

Sponge measures implemented in the case study

Meadows and pastures

Buffer strips and hedges

Minimum tillage

Afforestation

Urban forest parks

Wetland restoration and management

Permeable surfaces

Rain Gardens

Objectives

The regional water authority Waterschap Aa en Maas is continuously working on improving its water systems both for making it more resilient to climate change in terms of water quantity management and at the same time works on improving of the water quality and ecological values in line with the objectives of the Water Framework Directive. There is a large and diverse group of stakeholders related to this integrated water management and with limited space available there is a clear need to see beyond single measures to a wider catchment perspective of linking individual measures into overarching strategies, that take into account both the need to retain and provide water to end-users and at the same time improve the water quality and ecological status.
There is a high interest from the case owner, the regional water authority Aa and Maas, to further upscale visioning of sponge strategies in co-design with local stakeholders, including provincial government, other regional water authorities in the region, WWF-NL and local landowners / farmers organisations.

Involved partners

Authority type	Authority name	Authority role	Comments	Authority responsibility
Regional / sub-national water authority	Waterschap Aa en Mass	Initiation of the measure	Project Owner	Responsible
Regional / sub-national water authority	Waterschap Rijn en IJssel	Initiation of the measure	—	—
Research institute / University	Wageningen University & Research	Monitoring	—	Supporting

Site Information

Climate Zone

Cool temperate moist

Precipitation

852.00 mm

Temperature (°C)

11.00 °C

Runoff

240.00 mm

Runoff coefficient

0.28

Elevation range

1-30

Slope range

Elevation range: 1-30 masl-masl

Average catchment slope: 0.0007 m/m

River mainstem slope: 0.0004 m/m

Design and Implementation

Project scale

Meso

Project scale specifications

catchment

Project area

15 km²

Project area specifications

The area is characterized by intensive agriculture (crops and livestock). Extensive artificial drainage of agricultural land has been carried out because excessive wet soils are more difficult for farmers to access and cultivate. Over the years, the river system has been heavily modified to provide an efficient network of drainage and water supply, causing challenges for aquatic and riparian ecosystems, but also combatting drought events in the region.

Area subject to Land use change or Management/Practice change (ha)

68.00 ha

Policy and Governance

Policy description

The case study serves as a SpongeLab, emphasising participatory processes in the design and evaluation of sponge strategies (combinations of sponge measures at the landscape scale). Workshops will be conducted to generate spatial scenarios and collaboratively assess potential impacts. We will explore combinations of linear and area-based measures to optimise and improve overall landscape resilience to climate extremes and improve the ecological values in the area.

Land ownership

Waterschap Aa en Mass

Part of a wider plan

Yes

Public consultation

No

Has contractual arrangements

No

Impacts and Monitoring

Monitoring System

Monitoring parameters

High-density, innovative real-time online monitoring of water quantity and water
quality has been implemented since 2018 to inform participating landowners about the impact of their farming practices on soil and water quality.