CASE STUDY: Greater Aarhus, Denmark
DEMONSTRATOR B

Responsible partners: Amphi (Lars Briggs), AAKS, DTU

NBS Description

The demonstration activities will focus on two sites:

1) The Egå Engsø artificial lake and wetland site.

The Egå Engsø was established to clean the water (e.g., nutrients) before it runs into the bay. Also, it functions as a large water reservoir that slows down the water and protects the built-up areas between the lake and the bay against flooding from Egåen. In addition, a lock at the outlet of the stream which also contributes to the protection as it can pump water from Egåen into the bay when the water flows from the lake to the stream.

Established Egå Engsø

2) The area of Lystrup where 11 climate adaptation projects (mainly retention basins) have been implemented and launched (2015-2017) as a part of the Aarhus cloudburst strategy.

11 sub-projects in the suburb of Lystrup (Source: Aarhus Municipality)

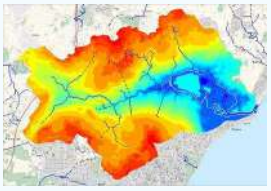
Benefits and co-benefits

- Egå Engsø lake:
  - Reduction of the flood risk of the densely populated areas in the lower part of the river valley and along Egå.
  - Clean water, for example, of nutrients thus reducing the impacts of intensive farming (nitrogen leakage)
  - Surrounding areas have developed into a protected natural area providing enhancement of green and recreational values.

Wetland Hede Enge

Egådalen is a characteristic landscape element, and is very low-lying in comparison with the surrounding terrain. The figure on the right shows a terrain model illustrating the extent of the Egå valley and the low-lying areas.

The former area of reclaimed land is outlined with a white line in the figure. The colours on the map show terrain elevation, with blue lowest and red highest. The restored lake from 2006 appears turquoise in the low-lying area.



Terrain model of Egådal catchment area.

The low-lying housing areas in the bottom of Egådal near Risskov are at risk of flooding, either through intense runoff from uplands or at high tide in Aarhus Bay. Currently, the area is protected by dikes and a pumping station at the Egå mouth in Aarhus Bay.

An investigation in 2008 recommended the incorporation of the remaining reclaimed ("possible future wetlands") land in the Egå valley to enhance the holding capacity and reduce flood risk from extreme rainfall events.

The yellow area is Vejlby-Egå Enge reclaimed land and the red line marks the boundary for a further proposed wetland, called Hede Enge (heath meadows)

Work within RECONECT

Monitoring and co-evaluation activities will include:

1) The combination of a fully implemented surveillance system, i.e. by demonstrating the development of flora and fauna in the demonstration area based on former monitoring and new monitoring strategy to be enhanced within RECONECT (eDNA method and inventories).

2) Monitoring of streamflow using the system Hymerdatabase.

3) Monitoring of social impacts.

4) In parallel to RECONECT the Municipality is scanning for possibilities to enhance the management of the Egå water-system with the purpose of adapting the system to more water in the future following the climate adaptation Strategy of the Aarhus Municipality. - e.g. by implementing another wetland (Hede Enge).

1) f

Key actors

- Municipality of Aarhus (AAKS)
- Amphi International APS (Amphi)

Key innovations and upscaling

- Similar reclaimed land can be found at many other locations in Denmark, and the work in Aarhus can therefore serve as a pilot project in terms of climate adaptation in the water sector.