Challenges related to diffuse agricultural pollution in Estonia to achieve WFD goals

Annika Mikomägi\textsuperscript{1}, Vallo Kõrgmaa\textsuperscript{2}

16.10.2023

\textsuperscript{1}Ministry of Climate of Estonia
\textsuperscript{2}Estonian Environmental Research Centre
• Estonian has **744** water bodies
• Only **55%** in good status

• **68%** of water bodies (242) are not in good status because of agricultural pollution
OUR MAIN CHALLENGES

• Nutrient-rich groundwaters having a negative impact on surface water bodies

• Seasonal leaching

• Farmers' low awareness of environmentally sustainable agricultural practices

• Insufficient implementation of measures
CASE STUDY

• Project: LIFE IP CleanEST

• Object: Soolikaoja

• Heavily **modified** waterbody

• **7,5 km long**, catchment area **122 km²**

• The ecological status is **bad**

• The creek locates in **Nitrate Vulnerable Zone**

• Aim: reducing the negative impact of nutrient-rich groundwater on surface water bodies

• Measures: **floating treatment wetlands**; and **in-stream wood chip bioreactor**
COST-EFFECTIVE SOLUTIONS FOR DIFFUSE POLLUTION

• **Floating treatment wetlands**: aquatic plants on artificial platforms capturing nutrients and removing pollutants.

• **Wood chip bioreactor**: denitrification is often limited by carbon in the natural environment, but the process can be stimulated by the addition of external sources.
NEXT STEPS TO REDUCE AGRICULTURAL DIFFUSE POLLUTION

• Agricultural and cost-effective site-specific measures
• Effective catch crops to reduce leaching
• Raising awareness:
  • Improving the farm adviser services
  • Liming to regulate soil acidity
  • Calculating plant nutrient flow at field and on farm level
• Development and implementation of conditional measures that guides the farmers to adopt sustainable agricultural methods and consider environmental criteria
Thank you!