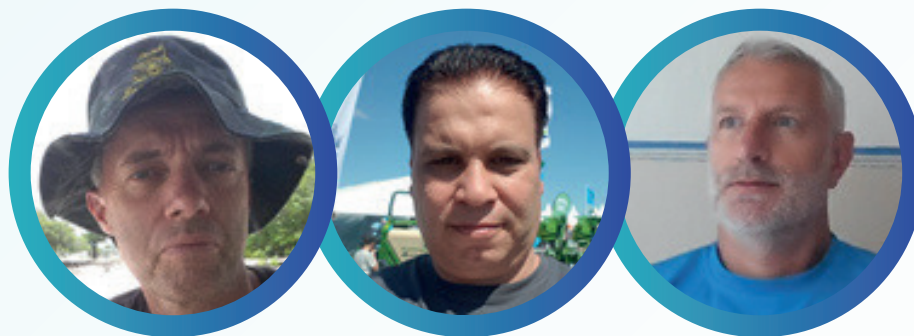


Otsustamist toetavad süsteemid kohaliku tasandi planeerimiseks



Mats Söderström, Omran Alshihabi, Faruk Djodjic

Rootsi Põllumajandusteaduste Ülikool

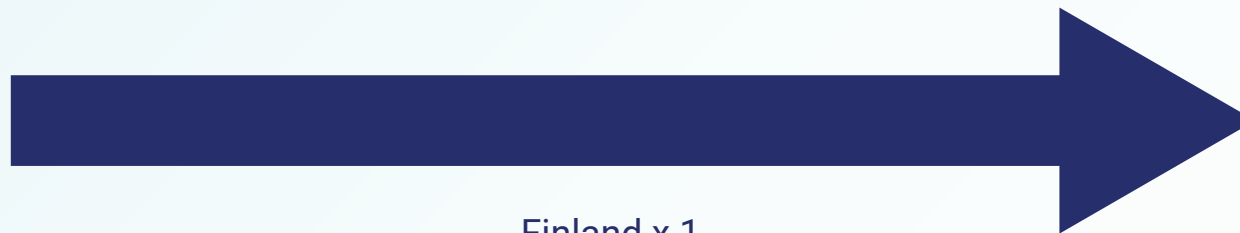
Multifunktsionaalsus, terve pinnas

Kas saame lõppkasutajatele esitada täpsemaid modelleerimisandmeid ning muuta need kättesaadavaks ja kasutatavaks otsustustoe protsessis selles kontekstis – meetmete mõju kvantifitseerimine valdkonnas/valdkonnasiseses ulatuses?

**Meetmete mõju
toitainete kadumise kohta
vähendamine alates
(kohandatud) modelleerimine**

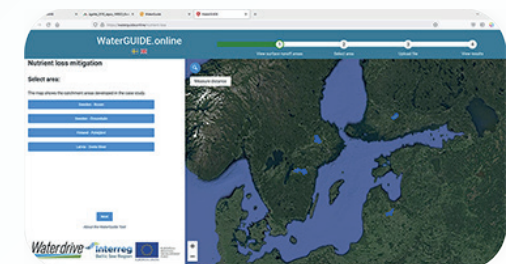
**Madalam kohalikuks
tasemel kasutades väga
üksikasjalik digitaalne
geograafilised andmed
ja automatiseeritud meetodid**

**Tehke andmed kättesaadavaks
lõppkasutajale – nõustajad,
põllumehed interaktiivses
vormingus
süsteem**



Finland x 1
Latvia x 1
Sweden x 2

WaterGUIDE.online



(Holger Johansson,
Kristina Mårtensson, et al)

Püügikultuurid, struktuursed
lupjamine, puhvertsoonid
Reduktsiooni modelleerimine
mõju piirkondlikule tasandile

(Faruk Djodjic et al)

Märgalad, erosioonihoht,
voolu kogunemine
Modelleerimine peal
kohalikul tasandil

Väga detailne
andmed mulla tekstuuri kohta,
orgaanilised mullad,
topograafia, põllud

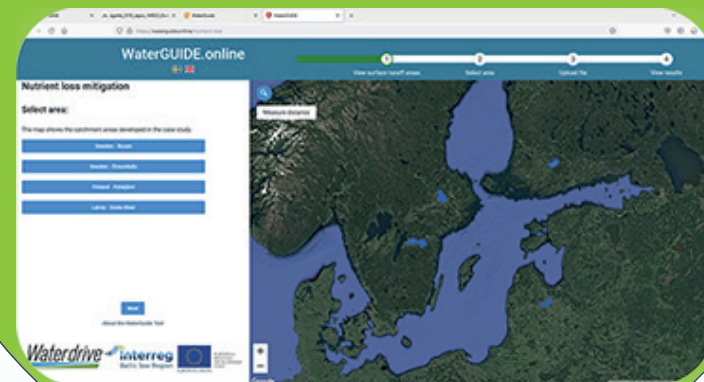
WP4 ökonoomne,
ruumilised aspektid

(Emma Svensson,
Magnus Bång et al)

Funktsioonid
vähendamiseks

(Kristin Piikki et al)

Geograafilised andmed
ja kasutajaliides



Allikas | <https://waterguide.online/nutrient-loss>

WaterGUIDE.online



Nutrient loss mitigation

Select area:

The map shows the catchment areas developed in the case study.

Sweden - Roxen

Sweden - Örsundaån

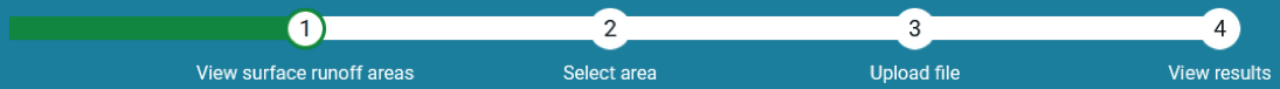
Finland - Pyhäjärvi

Latvia - Svete River

Next

About the WaterGuide Tool





Nutrient loss mitigation

Select area:

The map shows the catchment areas developed in the case study.

Sweden - Roxen

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About the WaterGuide Tool



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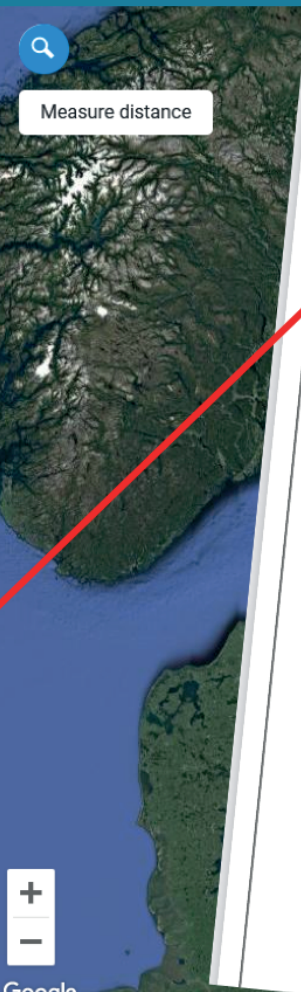
Latvia - Svete River

Next

About the WaterGuide Tool



Measure distance



version 2021-11-05

WaterGUIDE.online – Nutrient loss mitigation Manual and training material

4
View results

Read the text in the box below before you use the system

This decision support tool was developed by the Swedish University of Agricultural Sciences (SLU) within work packages 3 and 4 in the Interreg Baltic Sea Region Programme project Waterdrive in collaboration with a number of project partners.

Please note: The decision support tool is provided as is, the information presented is not guaranteed to be error free, and in most cases it was generated in a more general scale than the field level. The authors do not take any responsibility for the use of the tool; all users are solely responsible for any decisions made based on the tool. The intended users of this tool should be well acquainted with local field conditions, and the information provided. It is recommended that you go through this document before general use. The tool shall be regarded as working material, which provides information for discussion that exemplifies how various types of data related to nutrient loss from arable land can be presented to users (e.g. farmers, advisors and authorities) at the field scale, or even within-field scale. All numbers of costs and payments mentioned are only examples in the system, and should be used only for testing the system. Please read information material before using the tool. Remember that changes of the tool can be made at any time since it is a developing product within the Waterdrive project.

Read more about Waterdrive, and WP3 and WP4 here: <https://water-drive.eu/about/>
More project info here: <https://projects.interreg-baltic.eu/projects/waterdrive-194.html>

Read more about R&D on decision support systems at SLU: <http://www.slu.se/LADS>

Contacts:
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Faruk Djodjic, SLU, faruk.djodjic(at)slu.se



WaterGUIDE.online



Nutrient loss mitigation

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The map shows the catchment areas developed in the case study.

Sweden - Roxen

Sweden - Örsundaån

Finland - Pyhäjärvi

Latvia - Svete River

Next

About the WaterGuide Tool



version 2021-11-05

Start – and find your field (Sweden, Finland, Latvia)

Open <https://waterguide.online/nutrient-loss>

WaterGUIDE.online

Nutrient loss mitigation

Select area:

The map shows the catchment areas developed in the case study.

Sweden - Roxen

Sweden - Örsundaån

Finland - Pyhäjärvi

Latvia - Svete River

Waterdrive Interreg Baltic Sea Region

Select case study area. The system has more functions in the Swedish areas Roxen and Örsundaån. In the areas in Finland (Pyhäjärvi) and Latvia (Svete River) the functionality is limited due to differences in data availability. In this document we cover one of the Swedish areas on pages 1-10. Pages 3, 4, 5, 7, 10 are relevant if you choose a field in the case study areas in Latvia or Finland. In this training example, we click on *Sweden - Roxen*.

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Select demarcation

There is an area given to the point name or location in the case study. The highlighted map will help you find your way. Click above blocks, and then click the field or area you want to work with on one of the maps.

Search by block number

Enter the block number below:

Block ID: 64784858152

Example of block ids
Sweden: 64784858152
Finland: 8340145781
Latvia: 44345-25013

Waterdrive Interreg Baltic Sea Region

The system only works on single agricultural fields. There are different ways of finding the block as it is denoted here) of your interest. You can search using the block-id (example of the system is shown above), to zoom directly to the field. You can also do it manually, for example first using the search function to find a location, then zoom in to your field. Alternatively, you can click on the block of interest to select it. In this example we fill in the block number 64784858152 and then click Search.

- Kuidas näiteks:
- Leidke põld
 - Poolitage väli
 - Laadige üles oma andmed



Measures against nutrient loss adapted to the characteristics of the field

Navigate the tabs to see the results.

Hide field boundaries

Soil texture, erosion risk **Wetlands** Structural-liming Buffer zones Catch crops

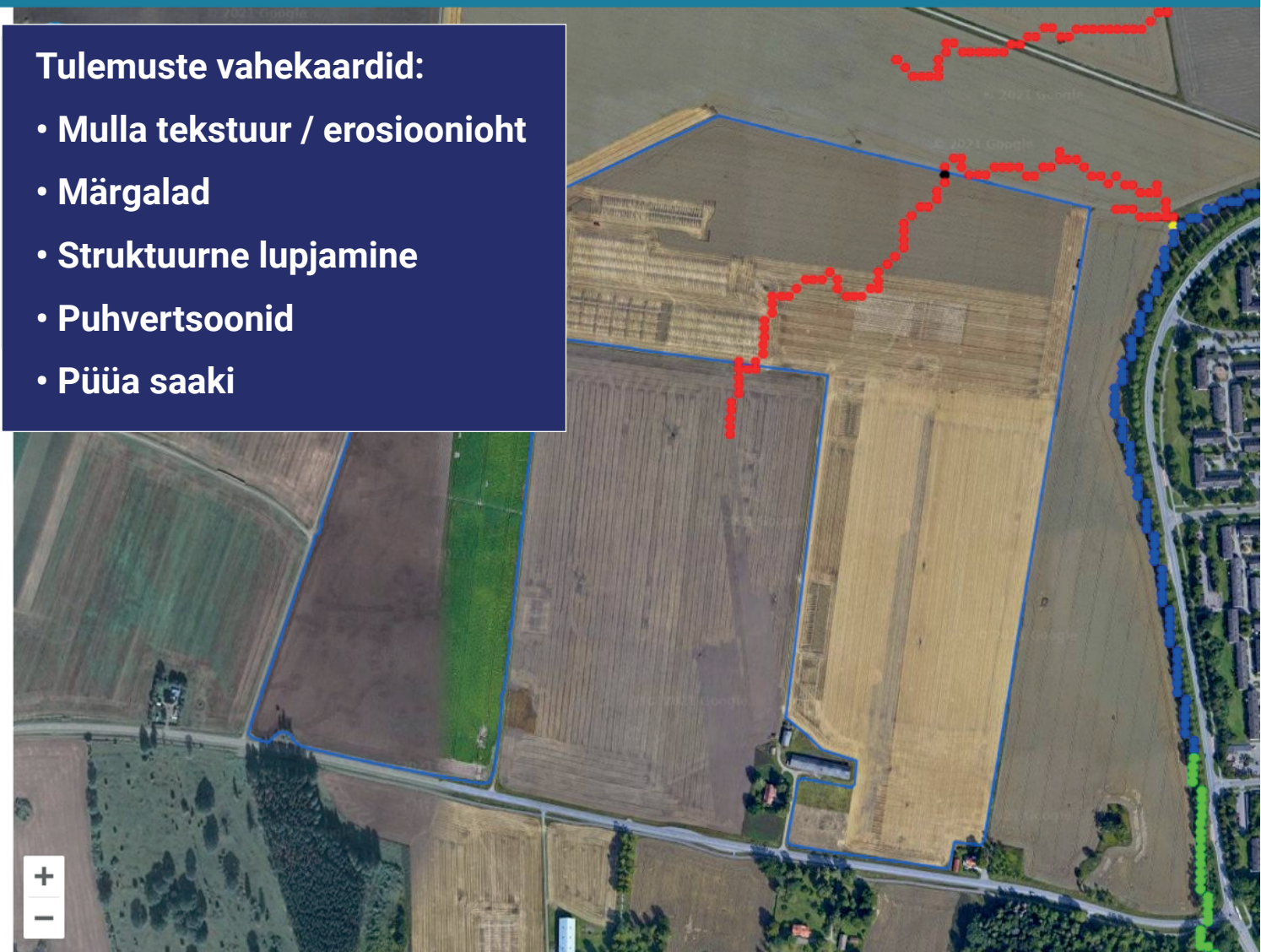
Wetlands ⓘ

Wetland (optimal area)

- 1.00 - 5.00 ha
- 0.50 - 1.00 ha
- 0.25 - 0.50 ha
- 0.10 - 0.25 ha

Wetland area (ha)	0.1
Reduced P-losses (kg/ha/Year)	77.6
N-reduction (kg/ha/Year)	465.6
Load P (kg/Year)	194.0
Load N (kg/Year)	3481.3
Cost (SEK/kg P/Year)	307.0
Cost (SEK/kg N/Year)	51.0
Upstream (ha)	71.7

- Tulemuste vahekaardid:**
- Mulla tekstuur / erosioonioht
 - Märgalad
 - Struktuurne lupjamine
 - Puhvertsoonid
 - Püüa saaki



Previous New search

About the WaterGuide Tool

Measures against nutrient loss adapted to the characteristics of the field

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Hide field boundaries

Soil texture, erosion risk **Wetlands** Structural-liming Buffer zones Catch crops

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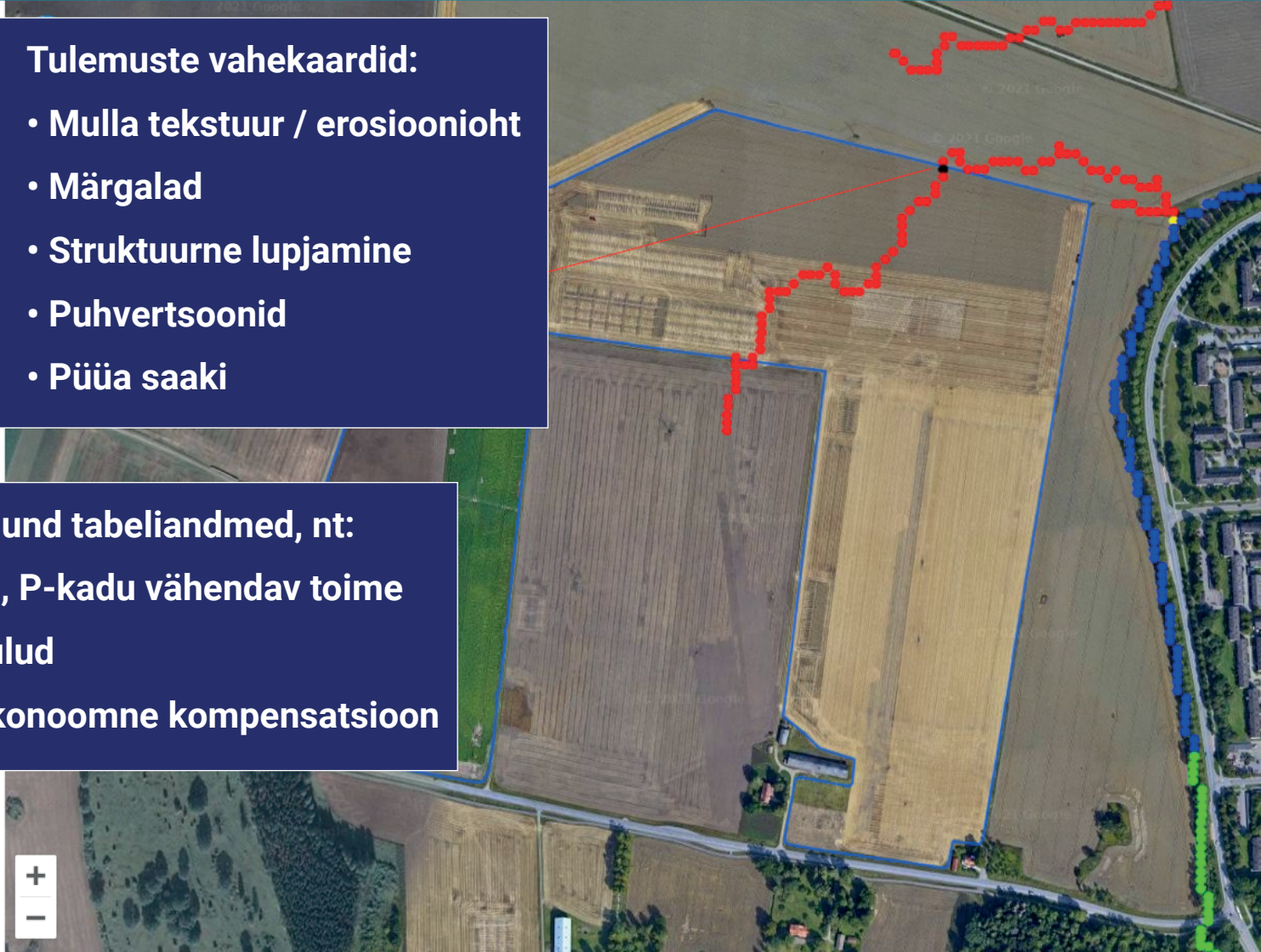
Wetland area (ha)	0.1
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Previous New search

About the WaterGuide Tool

- Tulemuste vahekaardid:**
- Mulla tekstuur / erosiooniht
 - Märgalad
 - Struktuurne lupjamine
 - Puhvertsoonid
 - Püüa saaki

- Väljund tabeliandmed, nt:**
- N-, P-kadu vähendav toime
 - Kulud
 - Ökonoomne kompensatsioon





Measures against nutrient loss adapted to the characteristics of the field

Navigate the tabs to see the results.

Hide field boundaries

- Soil texture, erosion risk
- Wetlands
- Structural liming
- Buffer zones
- Catch crops

Wetlands

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Previous

New search

About the WaterGuide Tool

Wetlands

This result tab contain modelled values for potential locations of selected field are shown to provide overview. This depends on the modelled field is shown. This depends on the modelled field are interested in to display detailed information optimal size is shown):

- Wetland area (ha): Calculated optimal wetland size, based on a hydrological load where 100 m (100 m³ water/m² wetland and year) is assumed to optimal. For run-off modelled values per sub-catchment are used. Only wetlands within a calculated optimal size range of 0.1-5.0 ha are displayed.
- P-reduction (kg/ha/year): Potential reduction in kg P/year in kg/ha wetland. Calculated according to Weisner et al. (2016).
- N-reduktion (kg/ha/year): As above but for nitrogen (N).
- Load P (kg/year): Load in kg P/year for the potential wetlands. Calculations are based on the average runoff and HELCOM Pollution Load Compilation 7 (PLC-7) type concentrations in the subcatchment (Hansson et al., 2019).
- Load N (kg/year): As above but for N.
- Cost (SEK/kg P/year): Potential cost in SEK/kg P/year for the wetland locations. Calculations are based on the following assumptions: a construction cost of 350,000 SEK/ha wetland and 20 years (17,500 SEK/year); maintenance cost 4,000 SEK/year; tenant costs depending on region (2,334 SEK/year where Roxen is location and 1,486 SEK/year where Örsundaån is located; from Statistics Sweden (SCB) in 2018).
- Cost (SEK/kg N/year): As above but for N.
- Upstream (ha): Calculated upstream drainage area in ha to a wetland location.

Please note: In reality, other locations for wetland may be more suitable due to local conditions not included in the modelling. The map shows the results from the modelling based on the data used and assumptions made.

More information in Djodjic et al. (2020)



Waterdrive Interreg Baltic Sea Region

EUROPEAN UNION

EURO REGIO DEVELOPMENT FUND

ABOUT THE WATERGUIDE TOOL



Kasutage dokumentatsiooni selgitav tekst ja viited

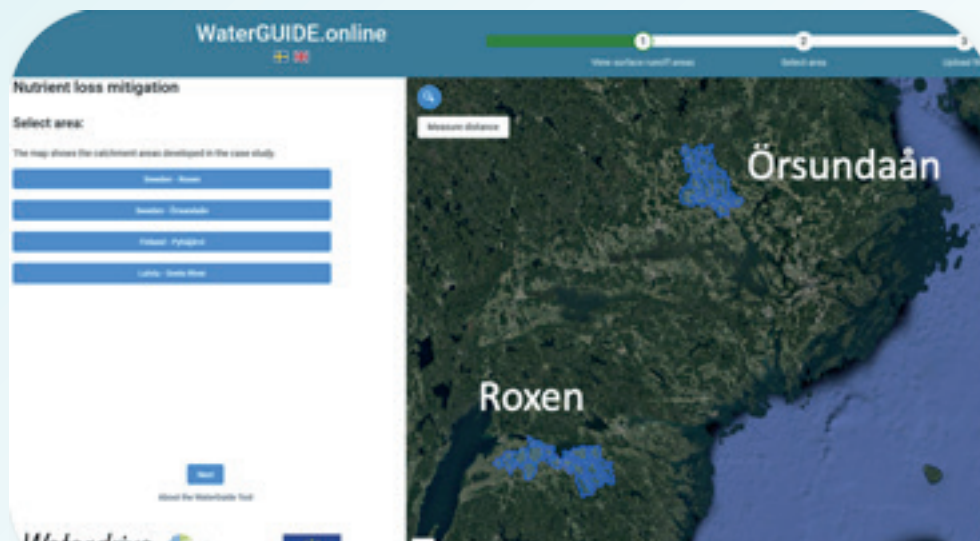
Tagasi piirkondlikule tasemele...

Piirkondlikud andmed

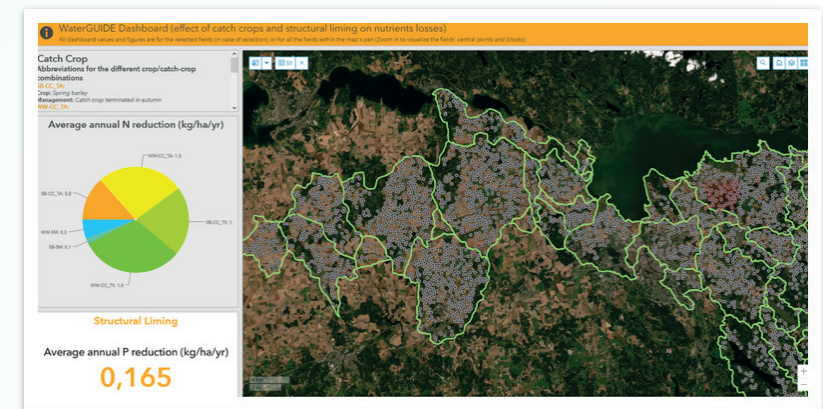
Vähendamine

Kohalikud andmed

Piirkondlikud kohalikud andmed ülevaadet juhtpaneelil



<https://waterguide.online/nutrient-loss>



https://bit.ly/waterguide_dashboard

Roxen piirkond:
3379 põldu >2 ha põllumaad

Örsundaån area:
2418 fields >2 ha cropland

Näide: mõju

- katteviljad vähendatud lämmastikukadudega
- struktuurne lupjamine P-kaovähendamisel

Lõppsõna

- Vaadake seda prototüübina – mitte täielik, esimene katse
- Väljakutse mastaabi vähendamiseks – nii teadlastele kui kasutajatele
- Tohutu andmenõudlus – kohalikud andmed peaksid modelleerimisega sobima, palju andmeid on puudu
- Lihtne valesi tõlgendada – vajalikud testid ja koolitus
- Sobib rühmaaruteludeks – üks osa otsustustoetusest, mitte ainuke
- Uued võimalused – alustades ilmnevad uued võimalused/vajadused

<https://waterguide.online/nutrient-loss> | https://bit.ly/waterguide_dashboard

Otsustamist toetavad süsteemid kohaliku tasandi planeerimiseks



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