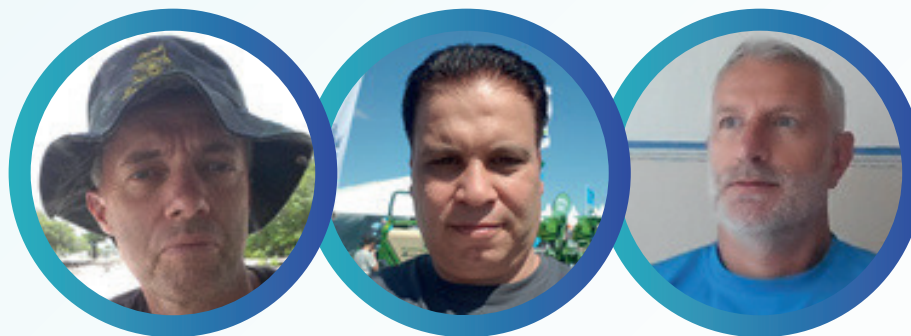


Sprendimų paramos sistemos vietos lygmens planavimui



Mats Söderström, Omran Alshihabi, Faruk Djodjic

Švedijos žemės ūkio mokslų universitetas

Daugiafunkcionalumas, sveikas dirvožemis

Ar galime galutiniams vartotojams pateikti pažangius modeliavimo duomenis ir padaryti juos prieinamus bei tinkamus sprendimų palaikymo procese šiame kontekste – kiekybiškai įvertinti priemonių poveikį lauko / lauko mastu?

Priemonių poveikis dėl maistinių medžiagų praradimo sumažinimas nuo (pritaikytas) modeliavimas

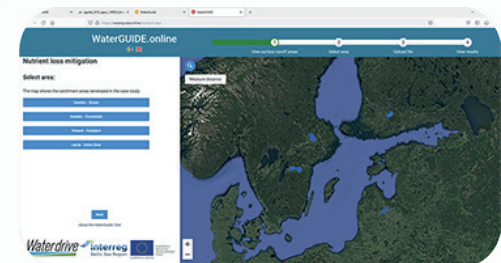
Sumažinti iki vietinio lygio lygiu naudojant labai detalus skaitmeninis geografinius duomenis ir automatizuoti metodai

Padarykite duomenis prieinamus galutiniam vartotojui – patarėjams, ūkininkai, interaktyviame sistema



Finland x 1
Latvia x 1
Sweden x 2

WaterGUIDE.online



(Holger Johnsson,
Kristina Mårtensson, et al)

Laimikis, struktūrinis
kalkinimas, buferinės zonos
Redukcijos modeliavimas
poveikį regioniniam lygiui

(Faruk Djodjic et al)

Pelkės, erozijos rizika,
srauto kaupimasis
Modeliavimas ant
vietos lygmeniu

Labai detalai
duomenys apie dirvožemio
struktūrą,
organiniai dirvožemiai,
topografija, laukai

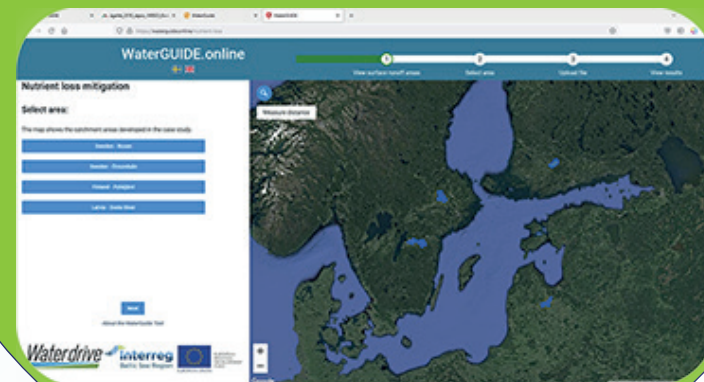
(Kristin Piikki et al)

Funkcijos
mastelio mažinimui

WP4 ekonomišką,
erdvinius aspektus

(Emma Svensson,
Magnus Bång et al)

Geografiniai duomenys
ir vartotojo sąsaja



Šaltinis | <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

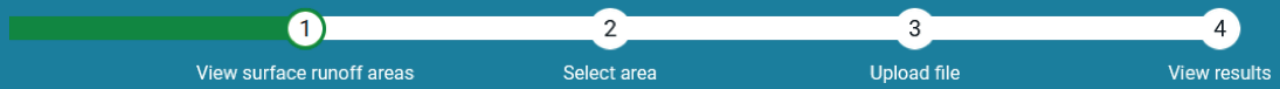
Finland - Pyhäjärvi

Latvia - Svete River

Next

About the WaterGuide Tool





Nutrient loss mitigation

Select area:

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Sweden - Roxen

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Sweden - Örsundaån

Finland - Pyhäjärvi

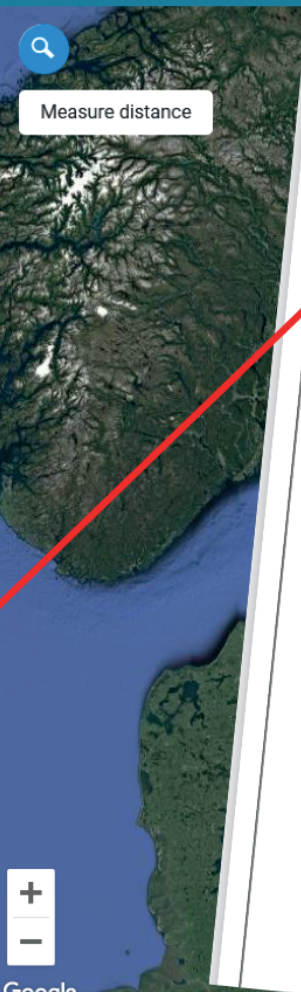
Latvia - Svete River

Next

About the WaterGuide Tool



Measure distance



version 2021-11-05

WaterGUIDE.online – Nutrient loss mitigation Manual and training material

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>

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Faruk Djodjic, SLU, faruk.djodjic@slu.se



View results

4

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

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*.

WaterGUIDE.online

Select demarcation

Find in our area (please provide the parish name or location in the case study) (the highlighted map will help you find your way)

Click above blocks, and then click the field of interest to zoom in to the map.

Search by block number

Enter the block number below

Block number

64784858152

Example of block ids

Sweden: 64784858152

Finland: 8340145781

Latvia: 44345-25013

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 entirely manually, then click on Show blocks (you must be zoomed in to do this), then click (in the map) on the block of interest to select it. In this example we fill in the block number 64784858152, and then click Search.

- Kaip, pvz.:
- Raskite lauką
 - Padalinkite lauką
 - Įkelti savo duomenis



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

- Rezultatų skirtukai:**
- Dirvožemio tekstūra / erozijos rizika
 - Pelkės
 - Struktūrinis kalkinimas
 - Buferinės zonos
 - Sugauti pasėlius



Previous New search

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

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 - Sugauti pasėlius

- Išvesties lentelės duomenys, pvz.:**
- N-, P nuostolių mažinimo efektai
 - Išlaidos
 - Ekonominis kompensavimas





Measures against nutrient loss adapted to the characteristics of the field

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

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Previous

New search

About the WaterGuide Tool



Wetlands

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

Naudokite dokumentus aiškinamasis tekstas ir nuorodos

- 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)

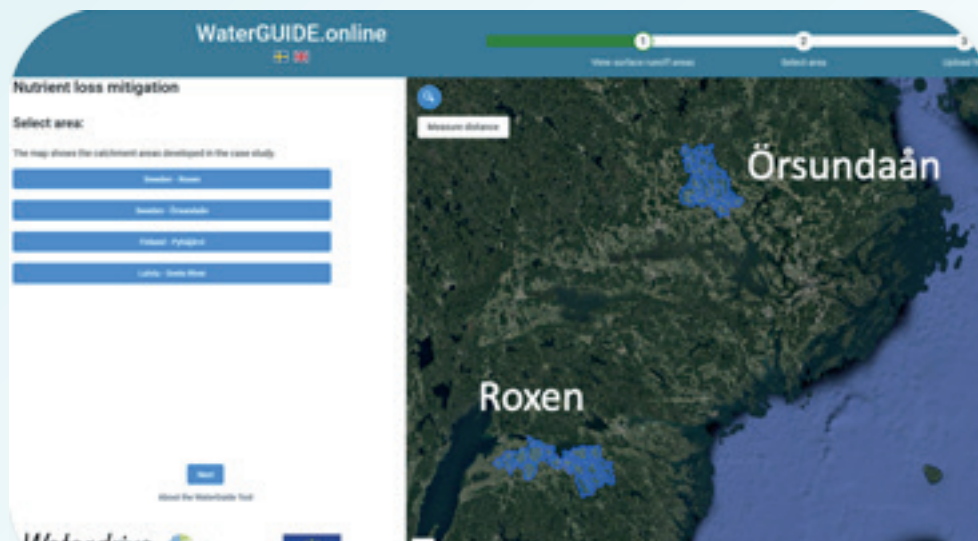
Grįžti į regioninį lygį...

Regioniniai duomenys

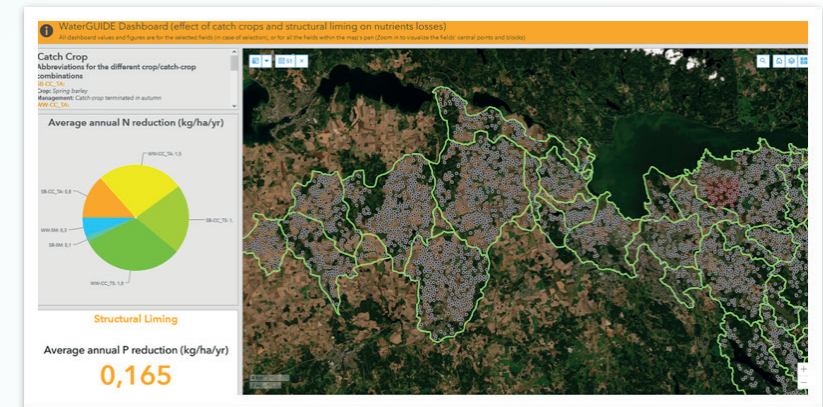
Sumažinimas

Local Vietiniai duomenys

Vietiniai regioniniai duomenys apžvalga prietaisų skydelyje



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



https://bit.ly/waterguide_dashboard

Roxen rajonas:

3379 laukai >2 ha pasėliai

Örsundaån sritis:

2418 laukų >2 ha pasėlių

Pavyzdys: poveikis

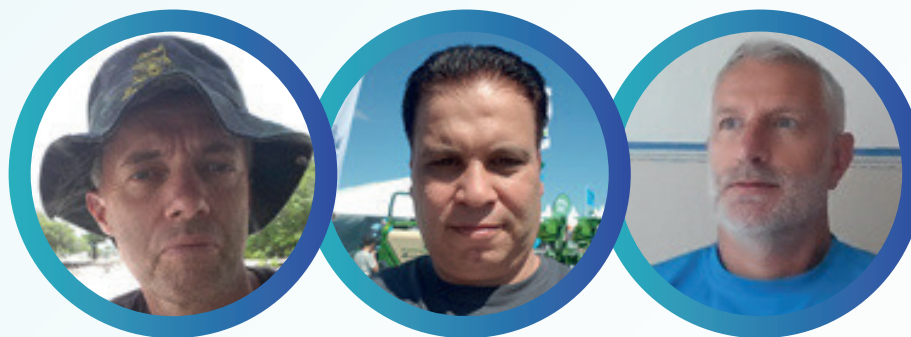
- dengiančius pasėlius su mažesniu azoto nuostoliu
- struktūrinis kalkinimas sumažinus P nuostolius

Baigiamosios pastabos

- Žiūrėkite tai kaip prototipą – nebaigtas, pirmas bandymas
- Sumažinimo iššūkis – ir tyrėjams, ir vartotojams
- Didžiulis duomenų poreikis – lokalūs duomenys turi tikti modeliavimui, trūksta daug duomenų
- Lengva klaidingai interpretuoti – reikalingi testai ir mokymas
- Tinka grupinėms diskusijoms – viena sprendimo paramos dalis, o ne vienintelė
- Naujos galimybės – kai pradedi, išryškėja naujos galimybės/poreikiai

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

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