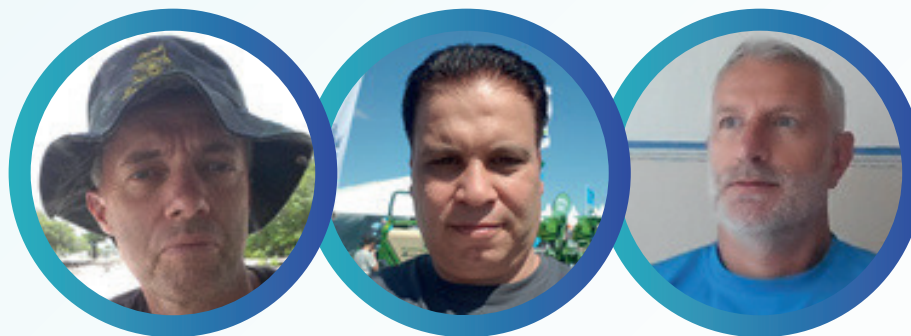


System wspomagania decyzji dla planowania na poziomie lokalnym



Mats Söderström, Omran Alshihabi, Faruk Djodjic
Swedish University of Agricultural Sciences

Wielofunkcyjna, zdrowa gleba

Czy możemy zaprezentować zaawansowane dane modelowe użytkownikom końcowym oraz udostępnić je i wykorzystać w procesie wspomagania decyzji w tym kontekście – kwantyfikację efektów działań w skali terenowej/w terenie?

Wpływ środków na
zmniejszenie utraty
składników odżywczych
z (dostosowanego)
modelowania

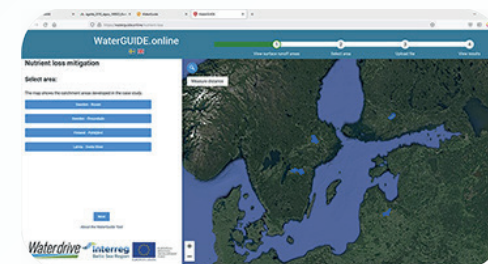
Zniżenie do poziom
lokalnego przy użyciu bardzo
szczegółowych cyfrowych
danych geograficznych
i zautomatyzowanych metod

Udostępnienie danych
użytkownikowi końcowemu
– doradcom, rolnikom,
w interaktywnym systemie



Finlandia x 1
Łotwa x 1
Szwecja x 2

WaterGUIDE.online



(Holger Johnsson,
Kristina Mårtensson, et al)

Międzyplony, wapnowanie
strukturalne, strefy buforowe
Modelowanie efektów
redukcyjnych na poziomie
regionalnym

(Faruk Djodjic et al)

Tereny podmokłe, ryzyko
erozji,
akumulacja przepływu
Modelowanie na poziomie
lokalnym

Bardzo szczegółowe
dane dotyczące tekstury
gleby, gleb organicznych,
topografii, pól

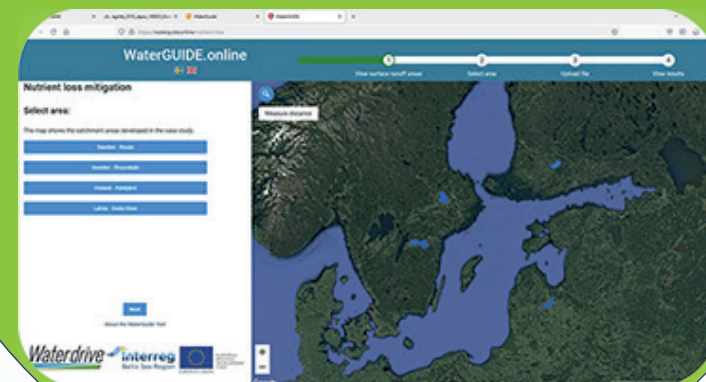
WP4 Aspekty
ekonomiczne,
przestrzenne

(Emma Svensson,
Magnus Bång et al)

(Kristin Piikki et al)

Funkcje
skalowania
w dół

Dane geograficzne
i interfejs użytkownika



Źródło | <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

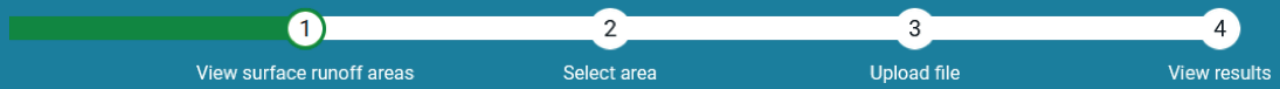
Latvia - Svete River

Next

About the WaterGuide Tool



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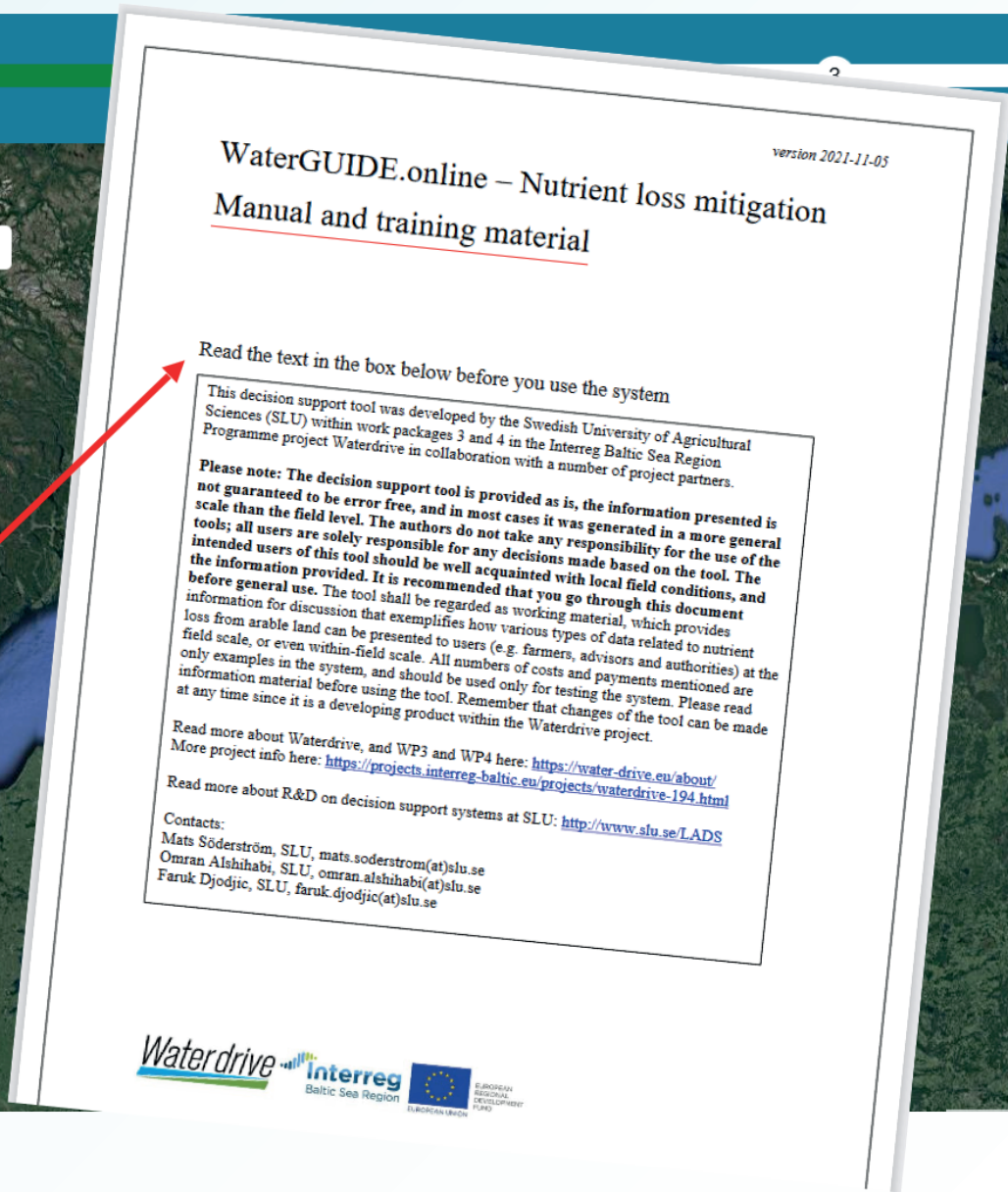
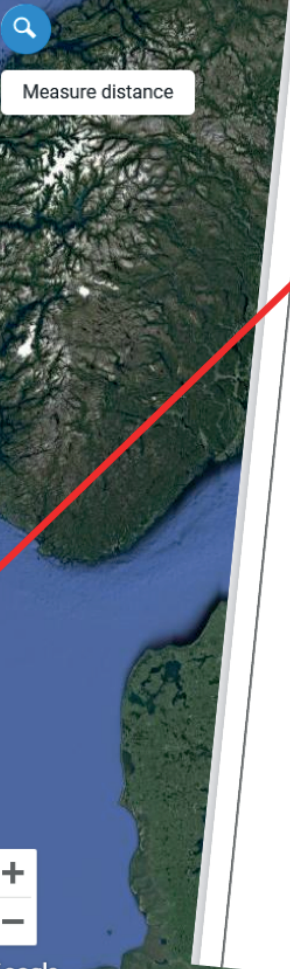
Sweden - Örsundaån

Finland - Pyhäjärvi

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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

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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

There is an area given to the parcel 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 No. 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 on the block of interest to select it. In this example we fill in the block number 64784858152 and then click Search.

2

- Jak:
- Znaleźć pole
 - Podzielić pole
 - Przesłać własne dane



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

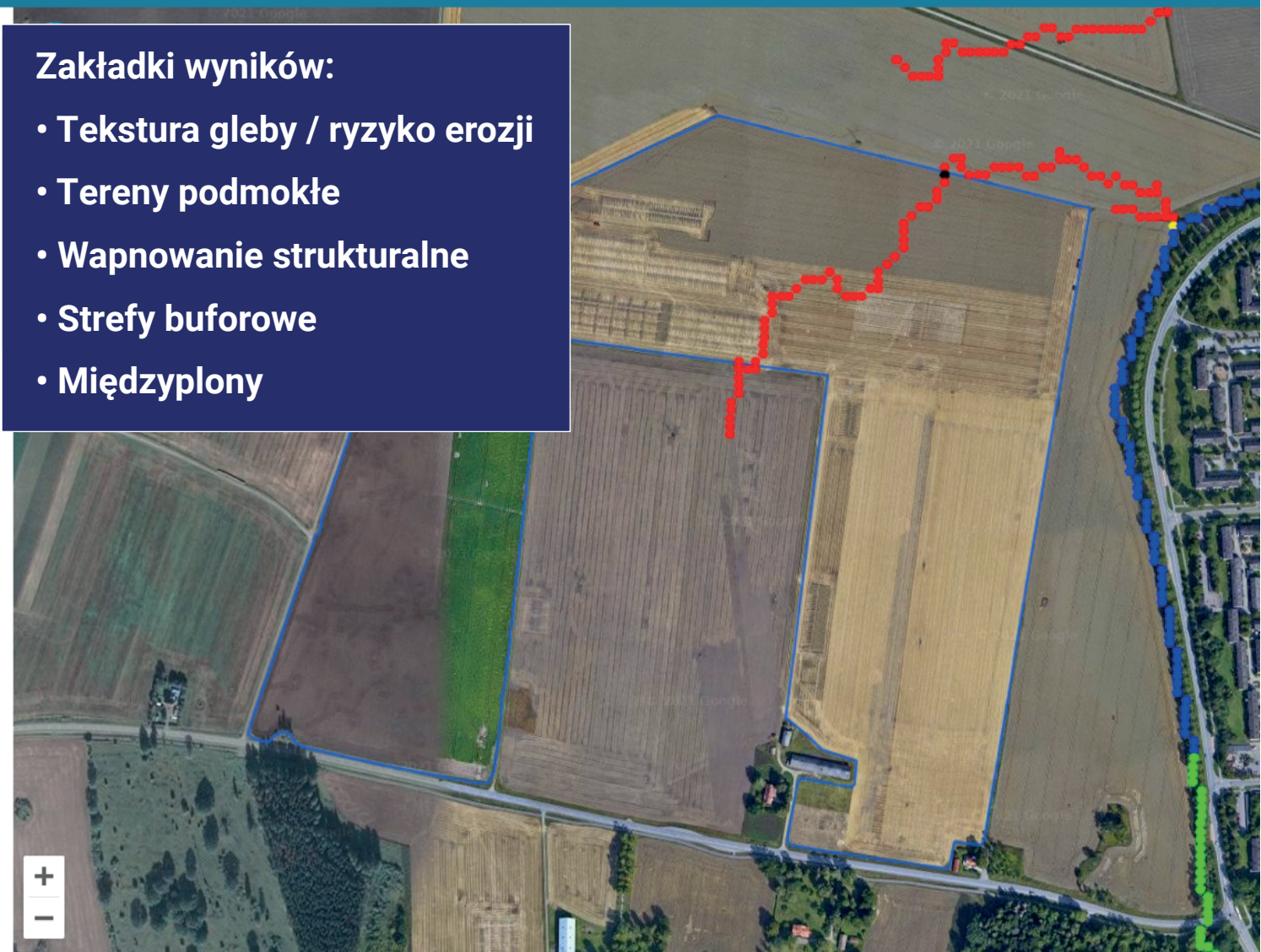
Wetland area (ha)	0.1
Reduced P-losses (kg/ha/Year)	77.6
N-reduction (kg/ha/Year)	465.6
Load P (kg/Year)	194.0
Load N (kg/Year)	3481.3
Cost (SEK/kg P/Year)	307.0
Cost (SEK/kg N/Year)	51.0
Upstream (ha)	71.7

Previous New search

About the WaterGuide Tool

Zakładki wyników:

- Tekstura gleby / ryzyko erozji
- Tereny podmokłe
- Wapnowanie strukturalne
- Strefy buforowe
- Międzyplony





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Wyprowadzenie danych w układzie tabelarycznym, np.:

- Efekty redukcji strat N i Ps
- Koszty
- Rekompensata ekonomiczna





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. 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):

Korzystanie z dokumentacji, aby uzyskać teksty objaśniające i odniesienia

- Wetland area (ha): Calculated optimal wetland area and year is assumed to optimal. For the selected field, the optimal size range of 0.10 - 0.25 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)

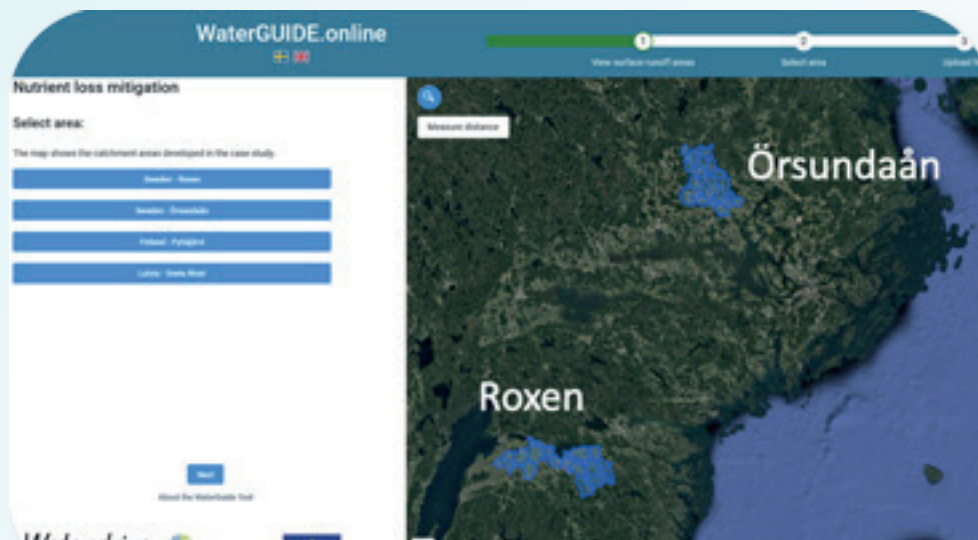
Back to regional level...

Dane regionalne

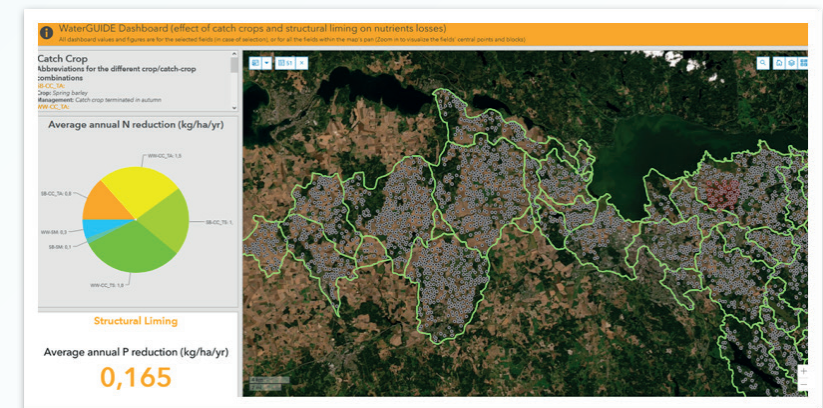
Skalowanie w dół

Dane lokalne

Dane lokalne do przeglądu regionalnego na pulpicie nawigacyjnym



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



https://bit.ly/waterguide_dashboard

Obszar Roxen:
3379 pól >2 ha gruntów
uprawnych

Obszar Örsundaån:
2418 pól >2 ha gruntów
uprawnych

Przykład: Wpływ

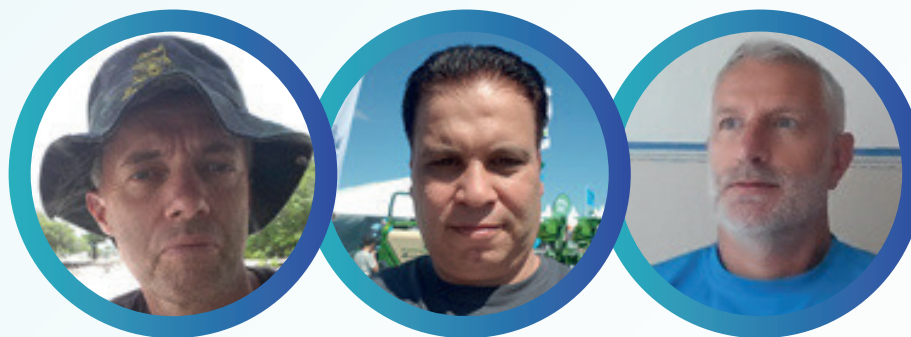
- upraw okrywowych na zmniejszoną utratę N
- wapnowanie strukturalne o zmniejszonych stratach P

Uwagi końcowe

- Zrozumienie, że to prototyp – niekompletny, pierwsza próba
- Wyzwanie zmniejszenia skali – zarówno dla badaczy, jak i użytkowników
- Ogromne zapotrzebowanie na dane – dane lokalne powinny pasować do modelowania, brakuje wielu danych
- Łatwe do błędnej interpretacji – potrzebne testy i szkolenia
- Nadaje się do dyskusji grupowych – jedna część wspomagania decyzji, nie jedyna
- Nowe możliwości – kiedy zaczynasz, pojawiają się nowe możliwości/potrzeby

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

System wspomagania decyzji dla planowania na poziomie lokalnym



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