LifeGood Water IP

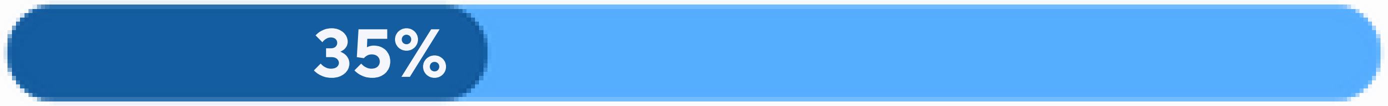
Improving the quality of Latvian rivers and lakes

Implementation of River Basin Management Plans of Latvia Towards Good Surface Water Status (LIFE GOODWATER IP)
(LIFE 18 IPE/LV/000014)

Ministry of Smart Administration and Regional Development Republic of Latvia

LVĢMC

THE PROBLEM:



Only one third of Latvia's rivers and lakes are considered to be of good ecological quality.

The remaining two thirds are classified as “water bodies at risk” – they might need help in order to reach good ecological quality.

In Latvia, surface water quality is most affected by:

- **Inflow of nutrients** (nitrogen and phosphorus) via wastewater and runoff from agricultural and forest lands. It fosters eutrophication – increased richness of nutrients in the water, leading to excessive algal and plant growth in the water body.
- **Man-made modifications** – dams, drainage systems, polders, straightening of rivers, embankments etc. These modificatins change the natural flow and water regime, thus affecting river and lake habitats.

LIFE GoodWater IP is the European Union's LIFE Programme Integrated Project tackling challenges of surface water management in Latvia.

We aim to improve the ecological quality of six rivers and three lakes (making up 17 water bodies), as well as 10 additional water bodies in Latvia by testing and applying innovative management measures.

Insights and experience gained during this process will be the starting ground for further improvement of water quality all throughout the country.

LIFE GoodWater IP demonstration objects – 6 rivers (Aģe, Mergupe, Auce, Slocene, Zaņa, Ēda) and 3 lakes (Papes, Saukas, Lubāna)

From ministries to NGOs – coming together to take care of Latvia's rivers and lakes

LVĢMC

Ministry of Climate and Energy Republic of Latvia

Ministry of Agriculture Republic of Latvia

ZMNĪ Zemkopības ministrijas nekustamie īpašumi

Latvijas Valsts Meži PLANTS · WOOD · RECREATION

Latvijas Biozinātņu un tehnoloģiju universitāte

University of Latvia

SILAVA

BIOR

Jelgavas novads

LŪKA

Zemnieku Saeima

LLKK

Pasaules Dabas Fonds

Latvian Fund for Nature

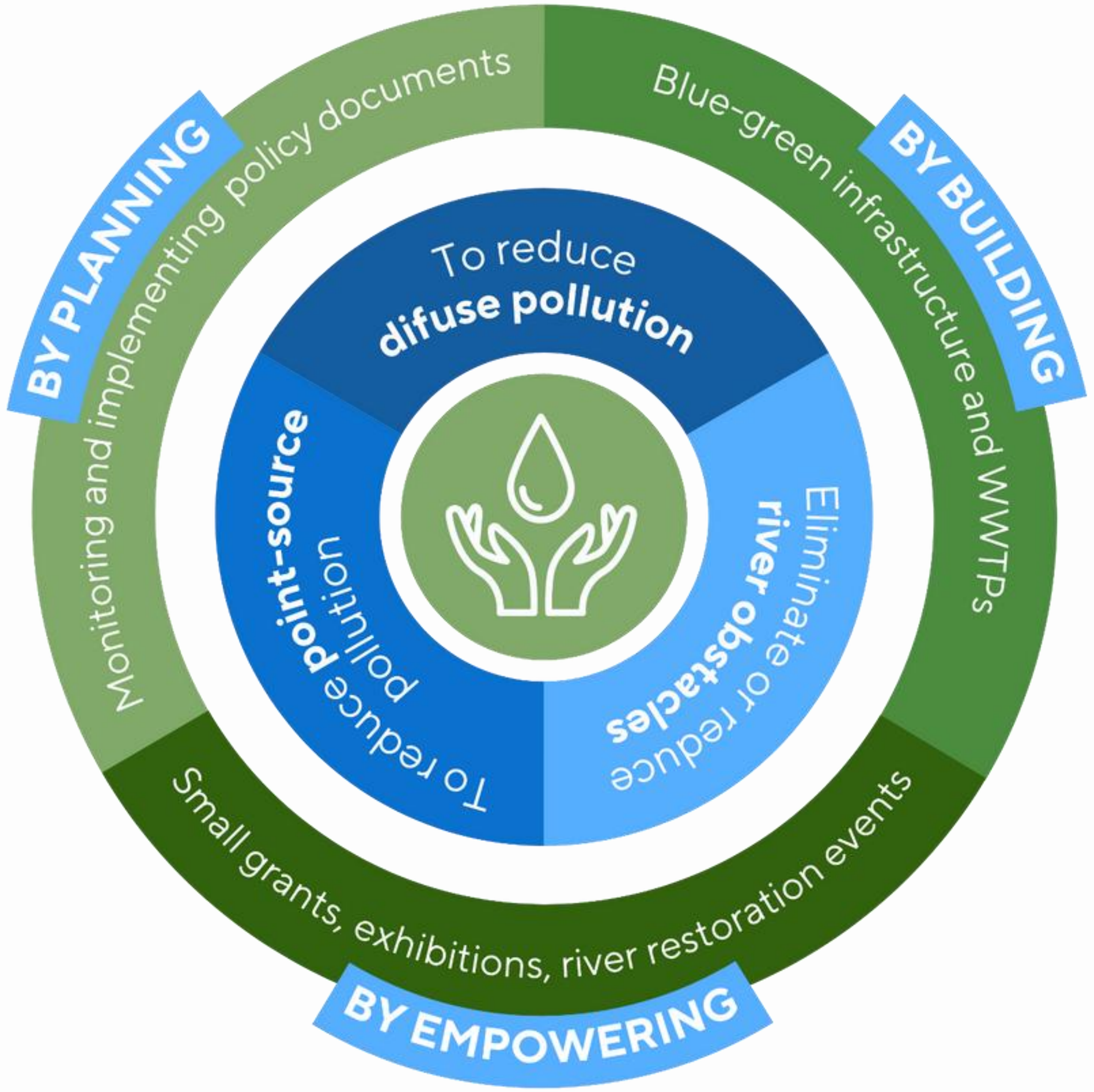
Baltijas krasti

BEF

PAIC

LifeGood Water IP

- Project duration: 01.01.2020 – 31.12.2027
- 19 partners
- Total budget: 14,46 M € of which 8,68 M € are contributed by the EU LIFE programme.



OUR TASKS

Improvement of wastewater management

Faulty wastewater treatment plants impact surface water quality significantly. In partnership with two municipalities – Tukums and Jelgava – we have improved the operation of two wastewater treatment plants (WWTPs).

Improved wastewater treatment plant in Engure, Tukums municipality (2024)

We've also developed a **mathematical model for wastewater risk assessment** in populated areas.

Newly built wastewater treatment plant in Nākotne, Jelgava municipality (2025)

Reduction of nutrient run-off from agricultural lands

After continuous water quality monitoring in Aģe, Slocene, Auce and Ēda river catchments, spaces for nutrient reduction measures have been determined.

So far:

- **7** surface flow constructed wetlands
- **1** sub-surface flow constructed wetlands
- **6** woodchip bioreactors
- **11** sedimentation ponds

have been or will be constructed.

Additionally, at least 50 km of drainage ditches will be restored by the end of 2027.

Constructed wetland on Aģe (2024) might be the largest in the Baltics!

Reduction of nutrient run-off from forest lands

Forestry can also contribute to decrease in surface water quality. Therefore, the project has created a portfolio of green-blue infrastructure solutions tackling this problem. In the basin of River Tora (Aģe tributary):

- **Forest stand diversification** has been carried out
- Three types of **sedimentation ponds** have been constructed
- **Sedimentation pond with peak flow control system** has been built

Sedimentation pond with peak flow control system in Tora river basin (2025)

Mitigating the impacts of modifications

Four rivers – Aģe, Auce, Mergupe and Zaņa – have been mapped entirely (more than 200 km), identifying areas leaving negative impact on the quality of natural habitats in the rivers.
In order to improve the hydromorphological quality of the streams (and subsequently the quality of natural habitats), different measures are applied:

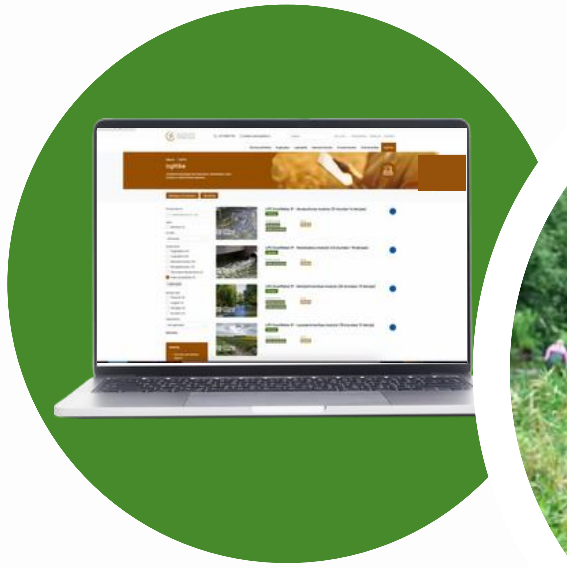
- **A fish pass** will be built nearby a small hydroelectric power plant
- The impact of **two culverts** will be mitigated
- **50 km of riverbed** incorporated in the national drainage system will be reconstructed

Removal of river obstacle in Zaņa (2023)

Community engagement and public education events

An important aspect of LIFE GoodWater IP is to educate and empower the citizens to help water bodies. We do that through:

- **Online learning platform** for agriculture, forestry, aquaculture and wastewater management specialists
- **Small grants programme** funding 7 activities related to water quality improvement (e.g. testing innovative method for phosphorus recovery from wastewater)
- In total **24 guided landscape tours** offering insights into different water bodies
- In total **5 traveling exhibitions** on rivers and lakes, fostering local care for the water bodies
- At least **30 river restoration events** with an educational focus on river habitats



Support for the authorities

As a part of the project, national sewage sludge management strategy has been developed and approved. Two nature protection plans – for Lake Pape and Lake Lubāns – are under development, as well as recomendations for agriculture, hydropower and aquaculture sectors. The project results will serve as input for the river basin management plans to come!

LV EN

LIKUMI

LATVIJAS REPUBLIKAS TIESĪBU AKTI

veidi tēmas visvairāk skatītie jaunākie

uz sākumu

Lai meklētu, pieņemiet mērķa sīkdatnes! meklēt

Izvērstā meklēšana

Autorizēties savā kontā

Kādēļ autorizēties vai reģistrēties?

Ministru kabineta rīkojums Nr. 237

Rīgā 2024. gada 28. martā (prot. Nr. 13 54. §)

Notekūdeņu dūņu apsaimniekošanas plāns 2024.–2027. gadam

1. Apstiprināt Notekūdeņu dūņu apsaimniekošanas plānu 2024.–2027. gadam (turpmāk – plāns).

2. Noteikt Vides aizsardzības un reģionālās attīstības ministriju un tās padotības iestādes atbilstoši to kompetencei par atbildīgajām institūcijām plāna īstenošanā, Zemkopības ministriju un tās padotības iestādes atbilstoši to kompetencei par līdzatbildīgajām institūcijām.

3. Ministrijām un to padotības iestādēm plānā paredzēto pasākumu īstenošanu 2024. gadā un turpmākajos gados nodrošināt atbilstoši piešķirtajiem valsts budžeta līdzekļiem. Ja plāna īstenošanas laikā rodas nepieciešamība pēc papildu valsts budžeta finansējuma, jautājumu par tā piešķiršanu izskatīt Ministru kabinetā valsts budžeta likumprojekta sagatavošanas procesā kopā ar visu ministriju un citu centrālo valsts iestāžu prioritāro pasākumu pieteikumiem, ievērojot valsts budžeta finansiālās iespējas. Ja valsts budžeta likumprojekta sagatavošanas procesā papildu valsts budžeta finansējums plānā paredzēto pasākumu īstenošanai netiek piešķirts vai tiek piešķirts daļēji, attiecīgajām ministrijām un to padotības iestādēm nodrošināt, ka tiek īstenoti tie plānā paredzētie pasākumi, kurus var nodrošināt atbilstoši piešķirtajiem valsts budžeta līdzekļiem.

Tiesību akta pase

Nosaukums: Notekūdeņu dūņu apsaimniekošanas plāns 2024.–2027. gadam
Izdevējs: Ministru kabinets
Veids: rīkojums
Numurs: 237
Pieņemts: 28.03.2024.
Stājas spēkā: 28.03.2024.
Publicēts: Latvijas Vēstnesis, 66, 04.04.2024.
OP numurs: 2024/66.12

Politikas plānošanas dokuments

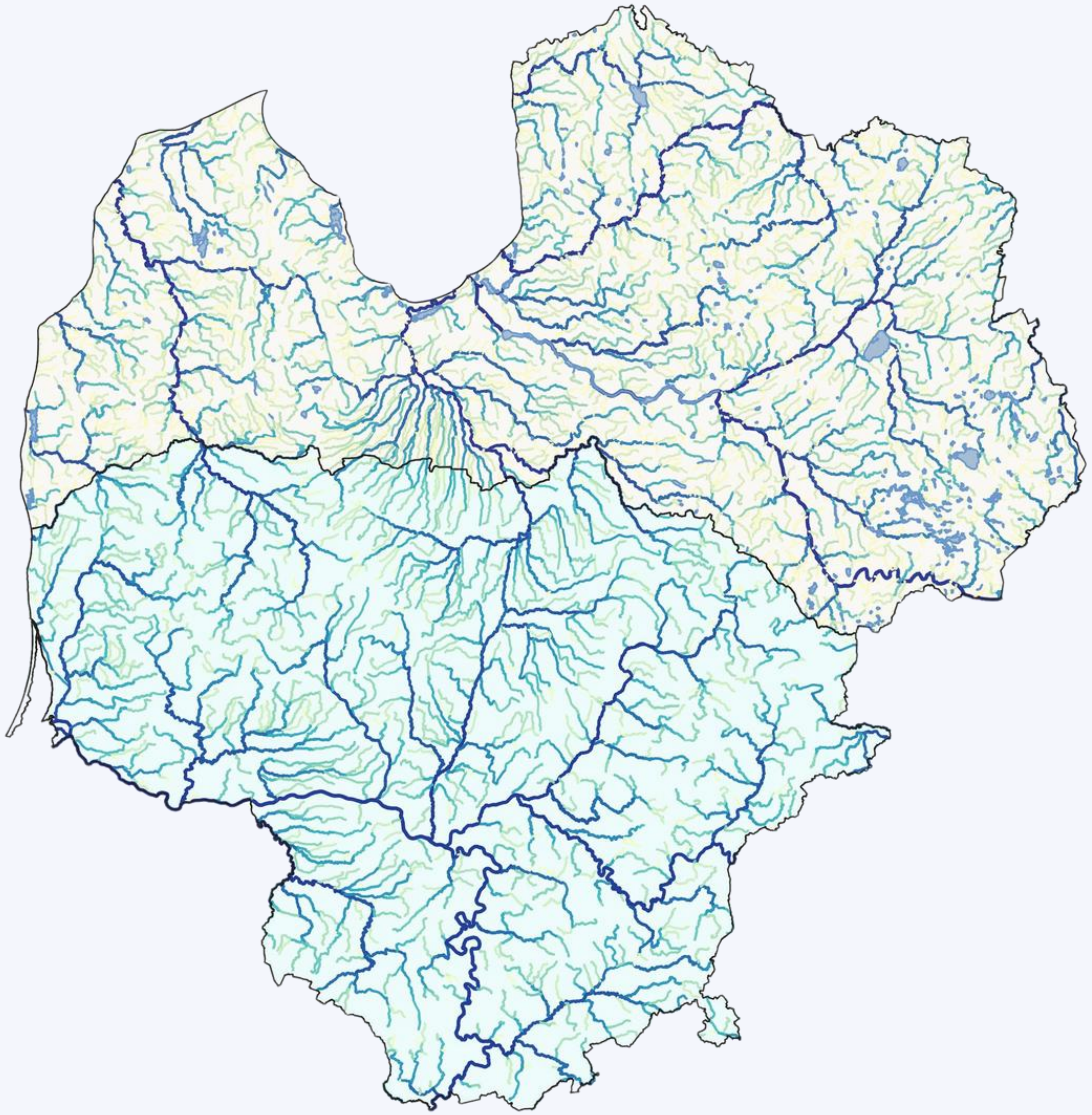
Nosaukums: Notekūdeņu dūņu apsaimniekošanas plāns 2024.-2027. gadam
Veids: plāns
Politikas joma: Vides aizsardzība
Atbildīgā iestāde: Vides aizsardzības un reģionālās attīstības ministrija

Satura rādītājs

CASE STUDY I

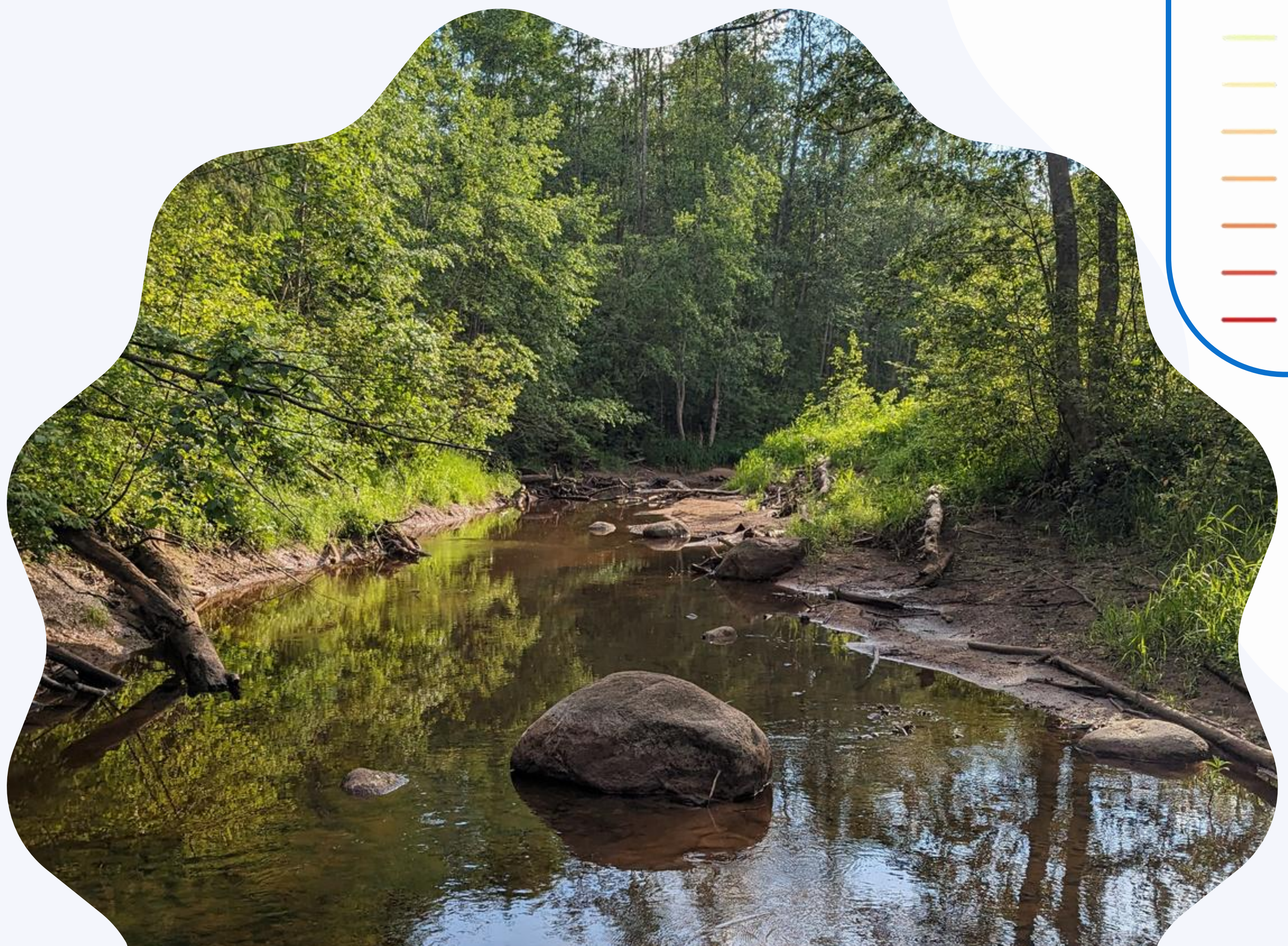
SWAT+ modelling system for Latvia

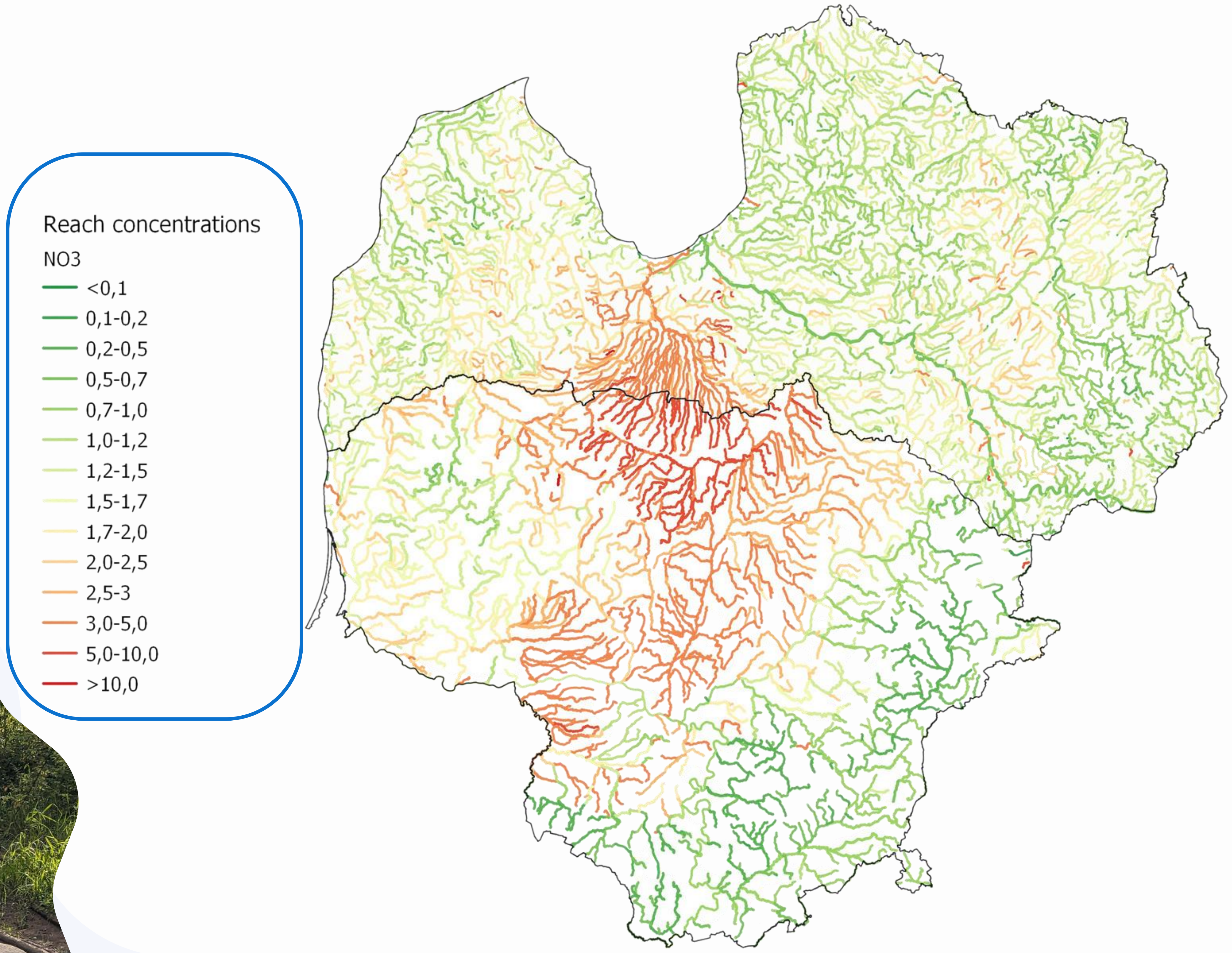
- merged with LT model
- 300 watersheds
- 5’000 catchments
- >500’000 hydrological response units



Result:

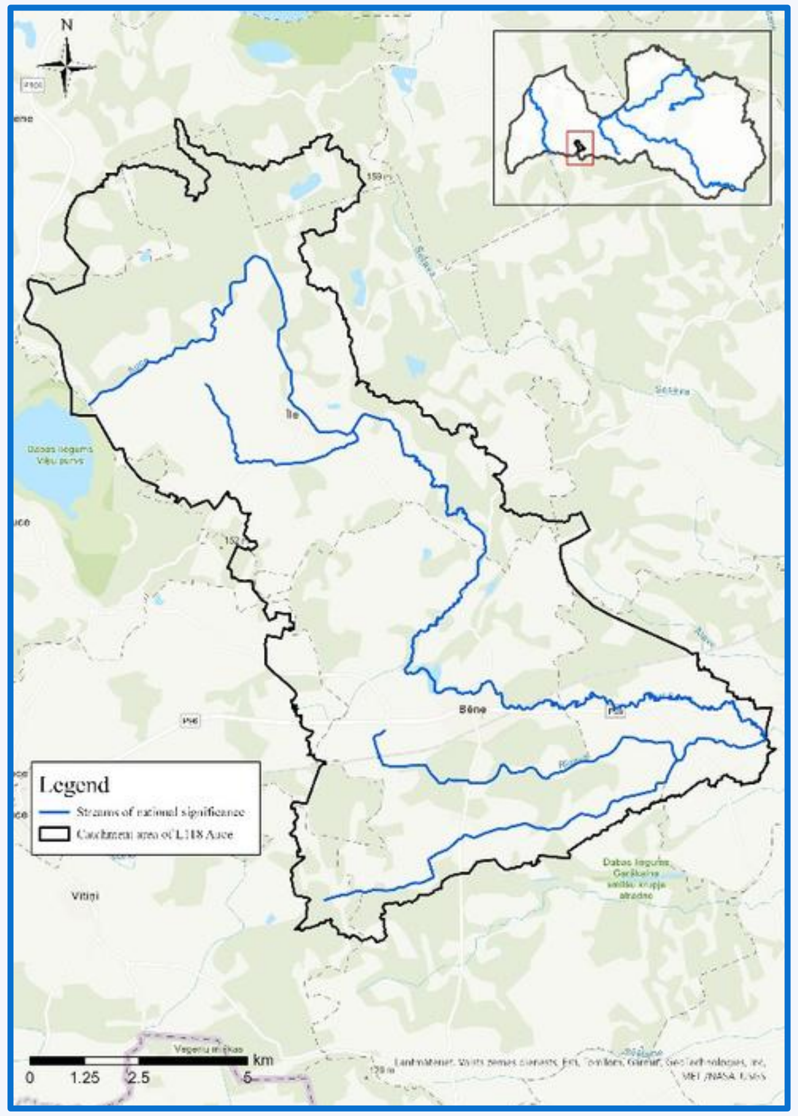
modelled instream N-NO_3 concentrations



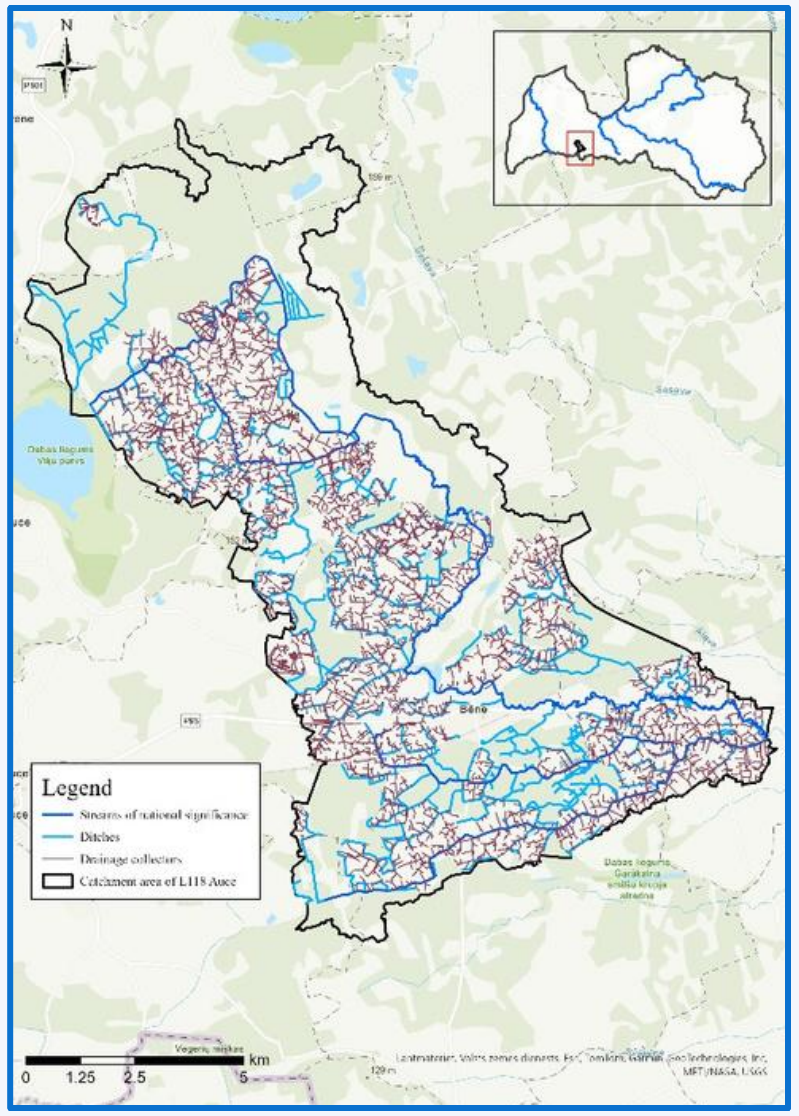


CASE STUDY II

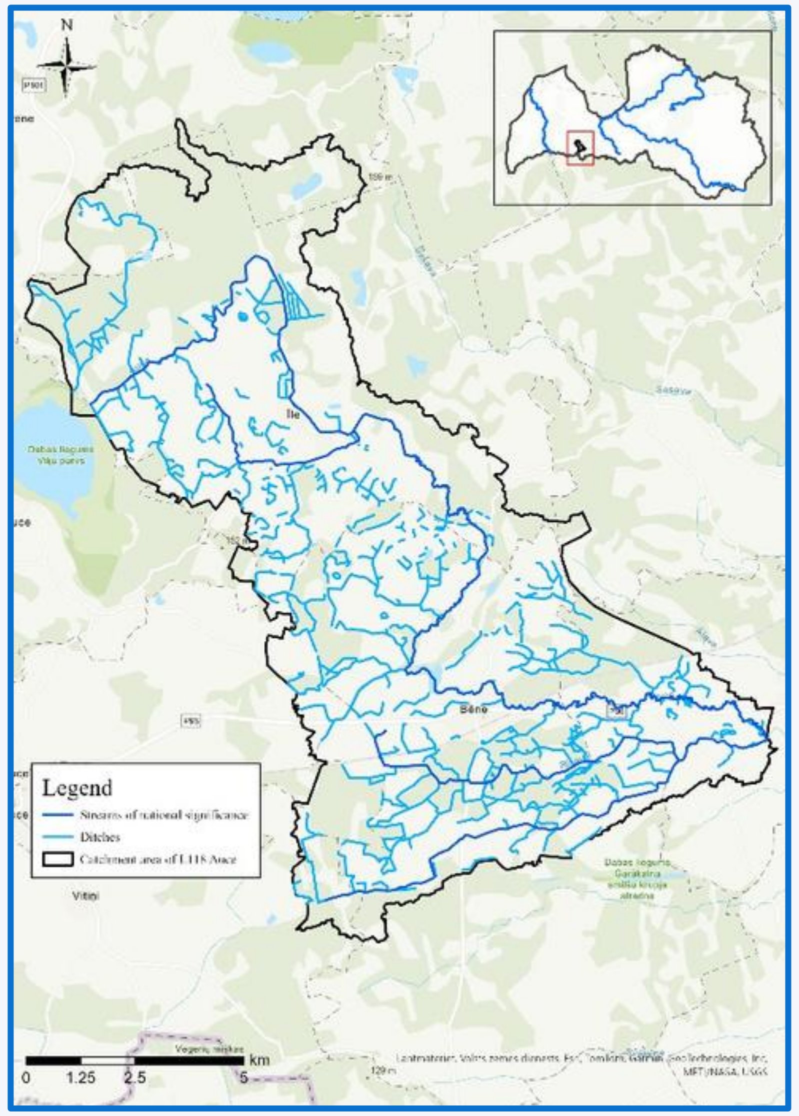
Using geospatial datasets for reduction of pollution with nutrients from agricultural sources



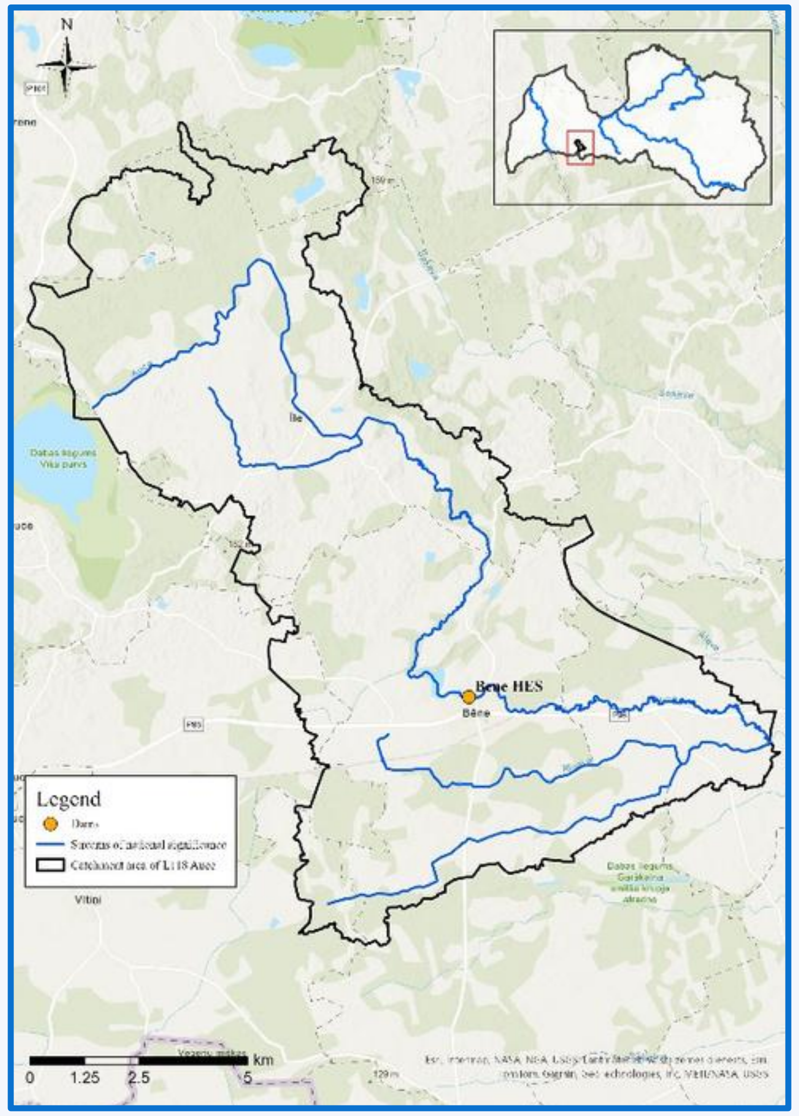
Streams of national significance



Agricultural ditches

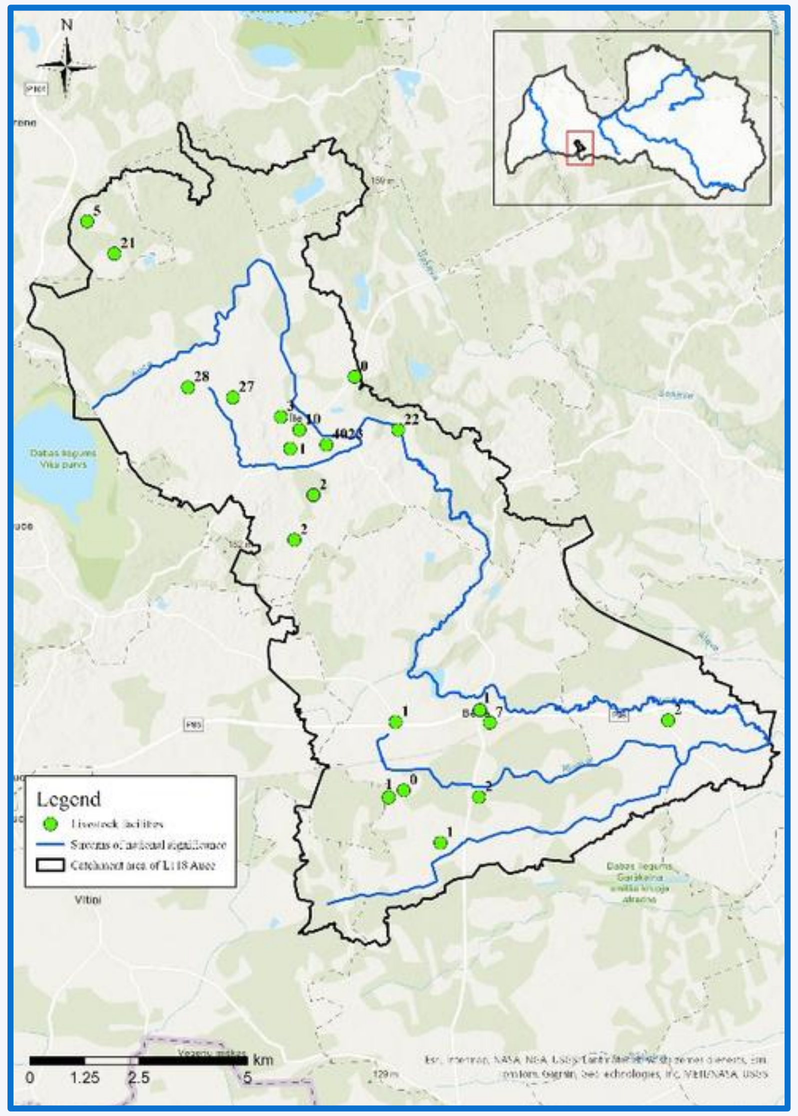


Drainage collectors

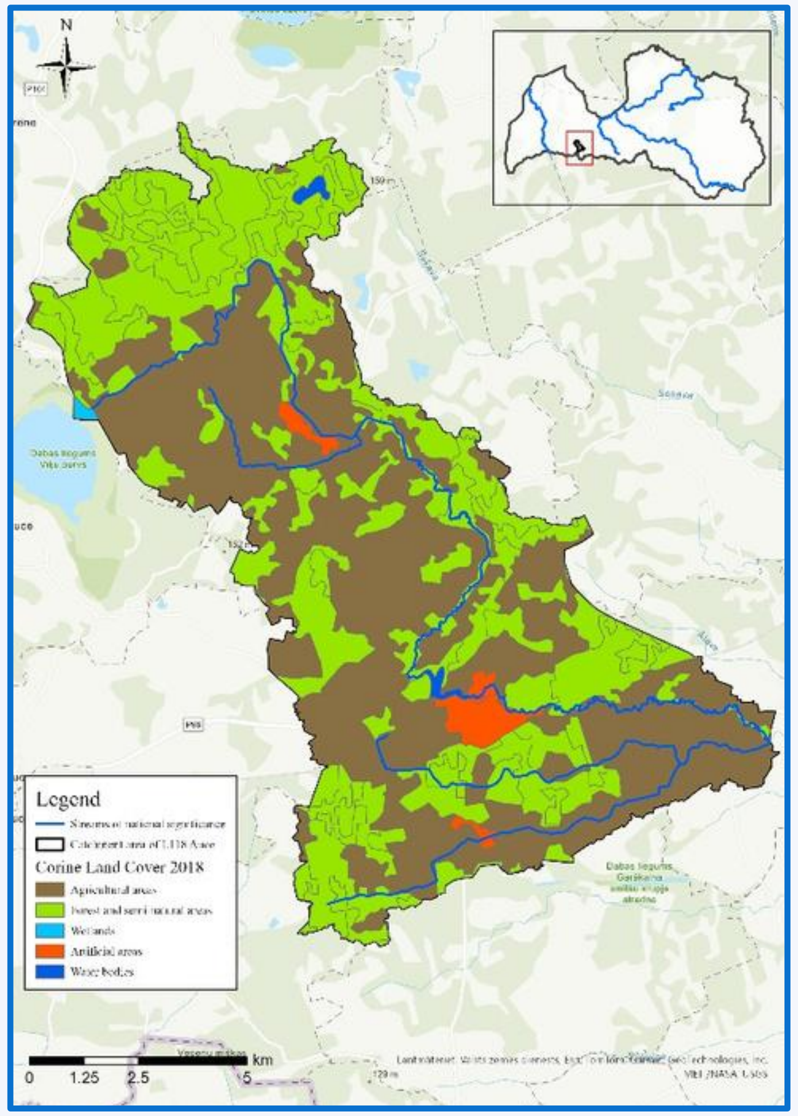


Small hydropower plant

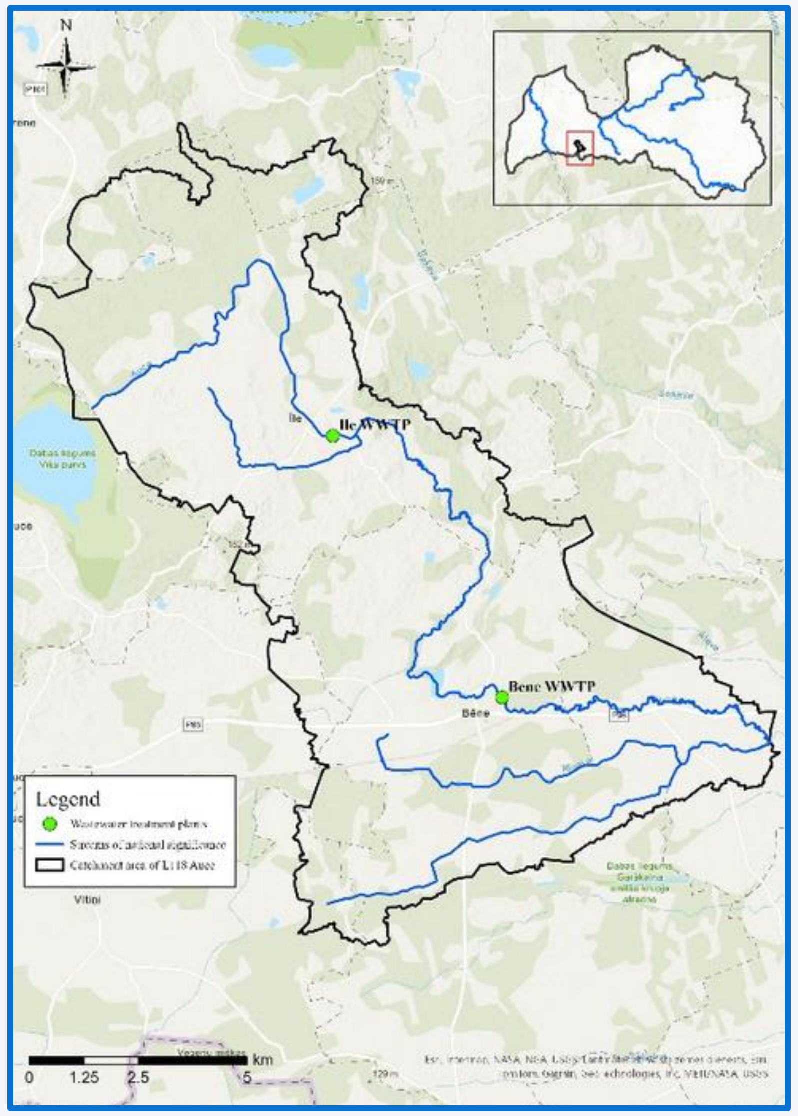
Reduction of pollution with nutrients from agricultural sources – analysis of geospatial datasets to identify potential sources



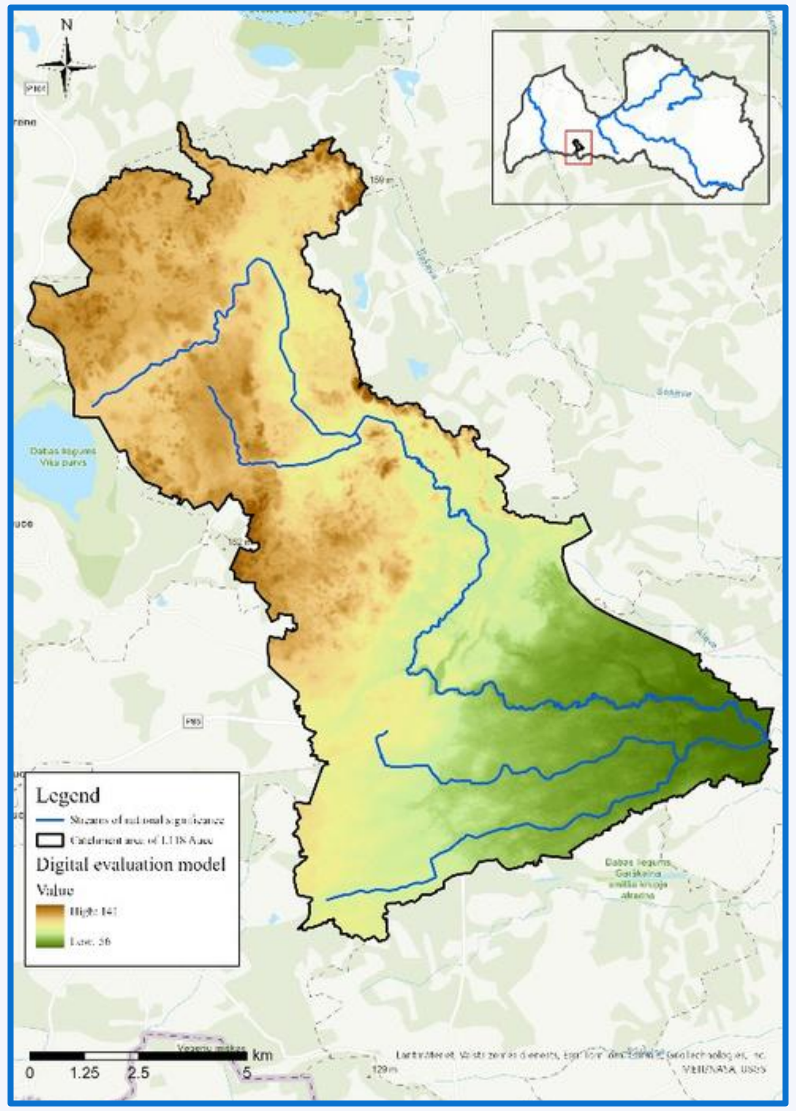
Livestock facilities



Wastewater treatment plants



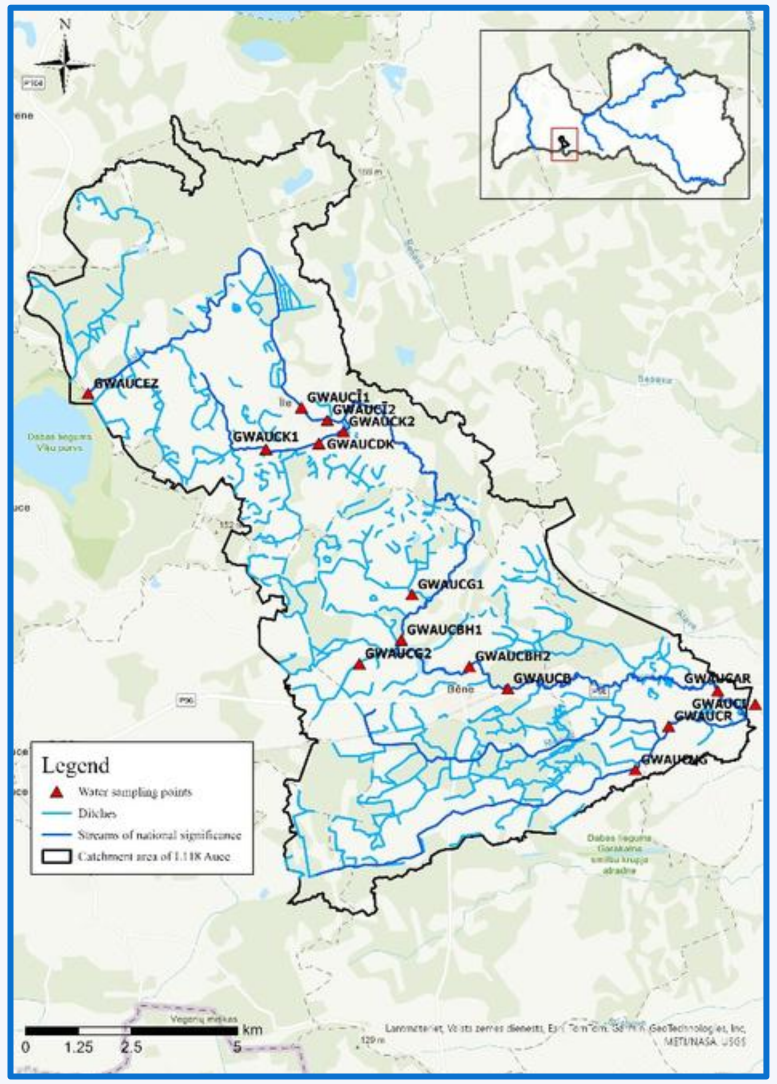
Corine Land Cover



Digital elevation model

Reduction of pollution with nutrients from agricultural sources – **water quality monitoring**

Water sampling sites



The results of water quality monitoring

	GWAUCK1	GWAUCDK	GWAUCK2	GWAUCEZ	GWAUCĪ1	GWAUCĪ2	GWAUCBH1	GWAUCBH2
N_{kop}	8.1	4.9	6.0	1.0	3.3	2.9	3.7	3.7
N/NH_4	0.08	0.05	0.08	0.13	0.09	0.11	0.07	0.09
P_{kop}	0.085	0.038	0.049	0.023	0.031	0.042	0.036	0.041
O_2	12.1	10.0	11.8	7.6	9.9	9.4	10.2	9.9
N/NO_3	6.6	4.3	4.5	0.1	2.4	1.8	2.7	2.7

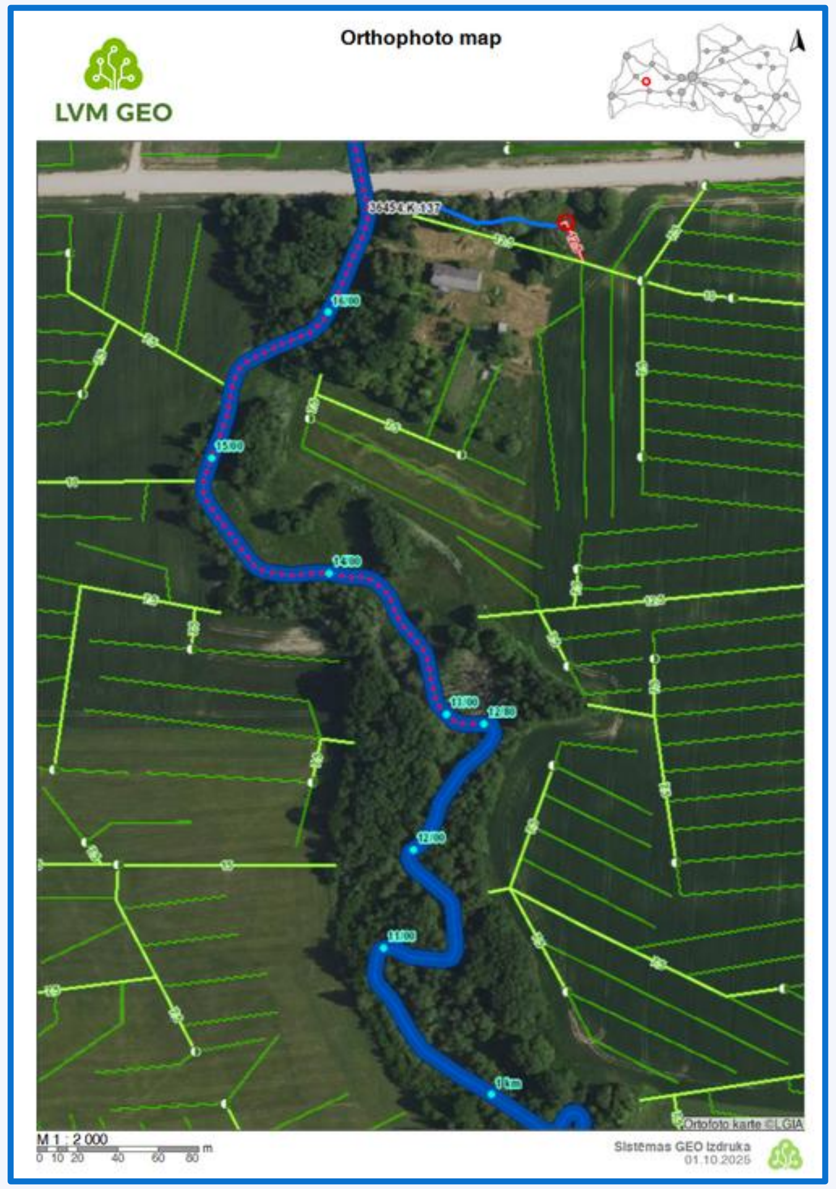
	GWAUCB	GWAUCAR	GWAUCI	GWAUCG1	GWAUCG2	GWAUCR	GWAUCVG
N_{kop}	3.3	3.6	3.6	8.1	5.3	5.4	5.5
N/NH_4	0.09	0.10	0.09	0.07	0.05	0.10	0.13
P_{kop}	0.049	0.055	0.043	0.055	0.038	0.038	0.044
O_2	10.1	10.3	9.8	10.6	8.8	12.2	11.8
N/NO_3	2.2	2.4	2.6	6.7	4.4	4.1	4.1

High	Good	Moderate	Poor	Bad

Reduction of pollution with nutrients from agricultural sources – **selection of the site for implementation of a surface flow constructed wetland**

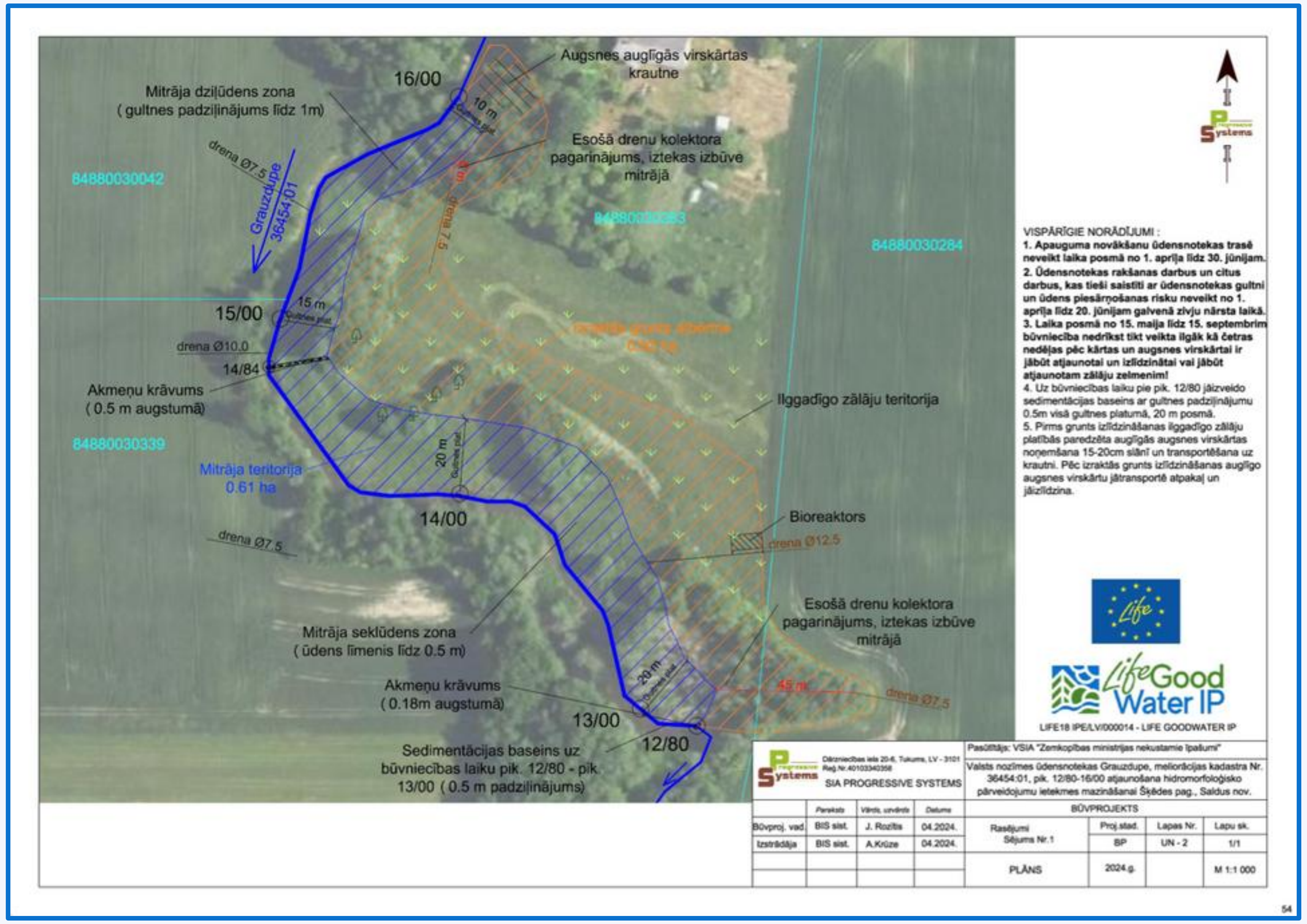
Naturally occurring low-lying areas

Opinion of the owners

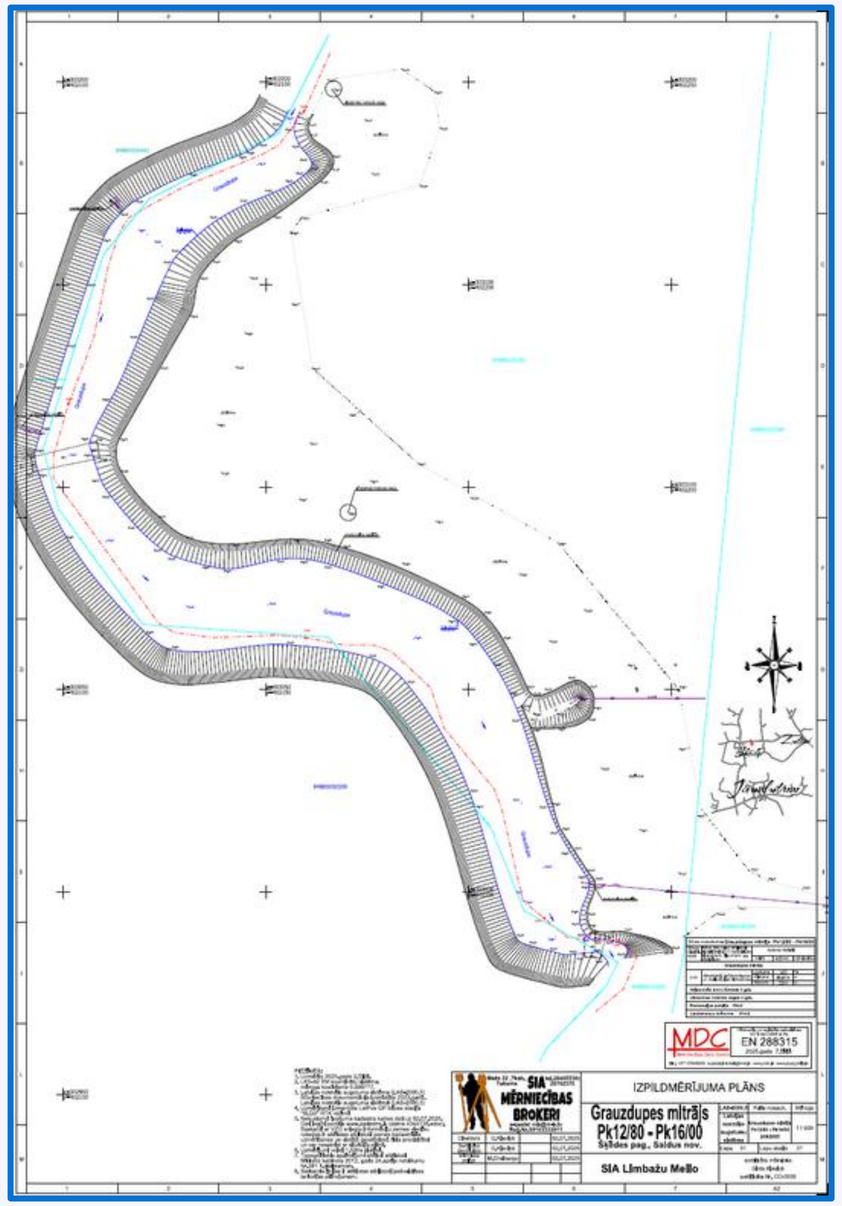


Presence of drainage systems

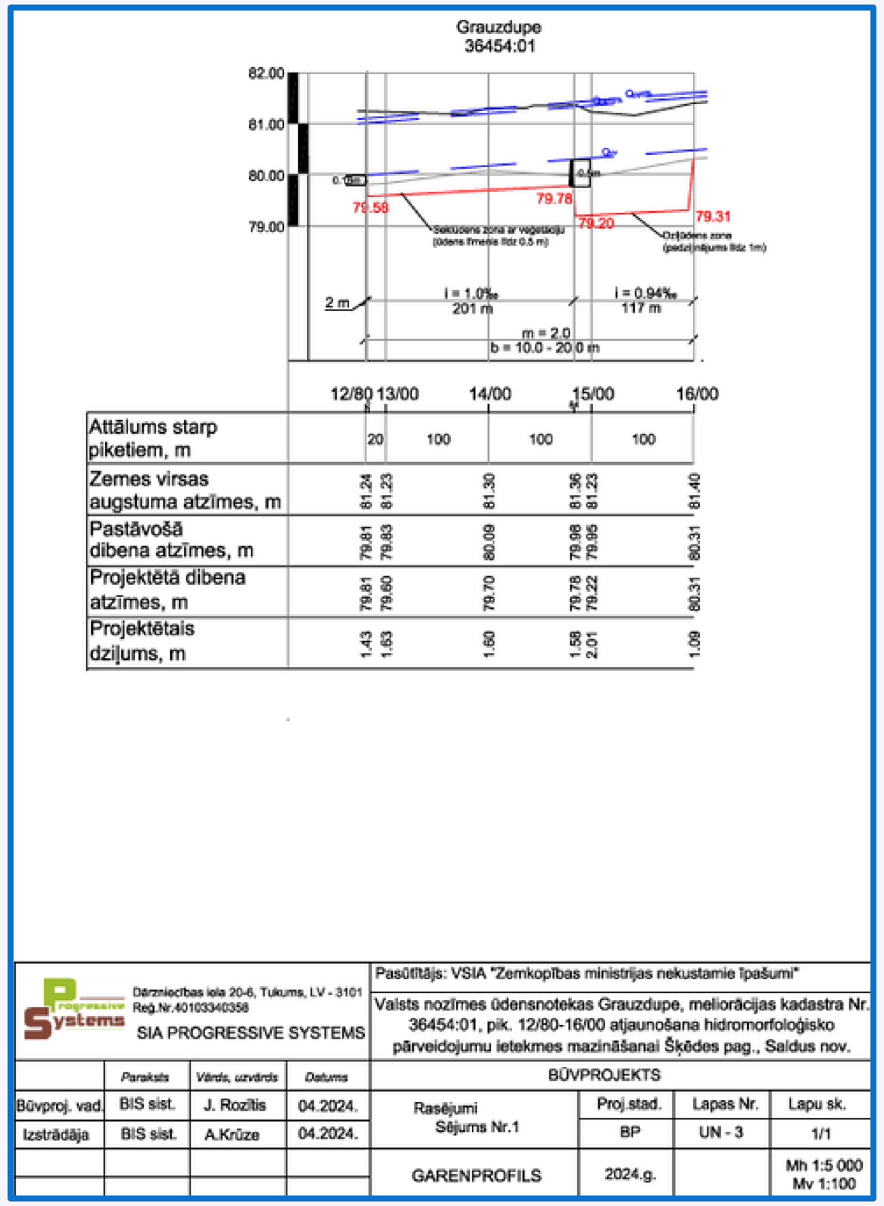
Reduction of pollution with nutrients from agricultural sources – **design considerations for a surface flow constructed wetland**



Plan of constructed wetland



Topography

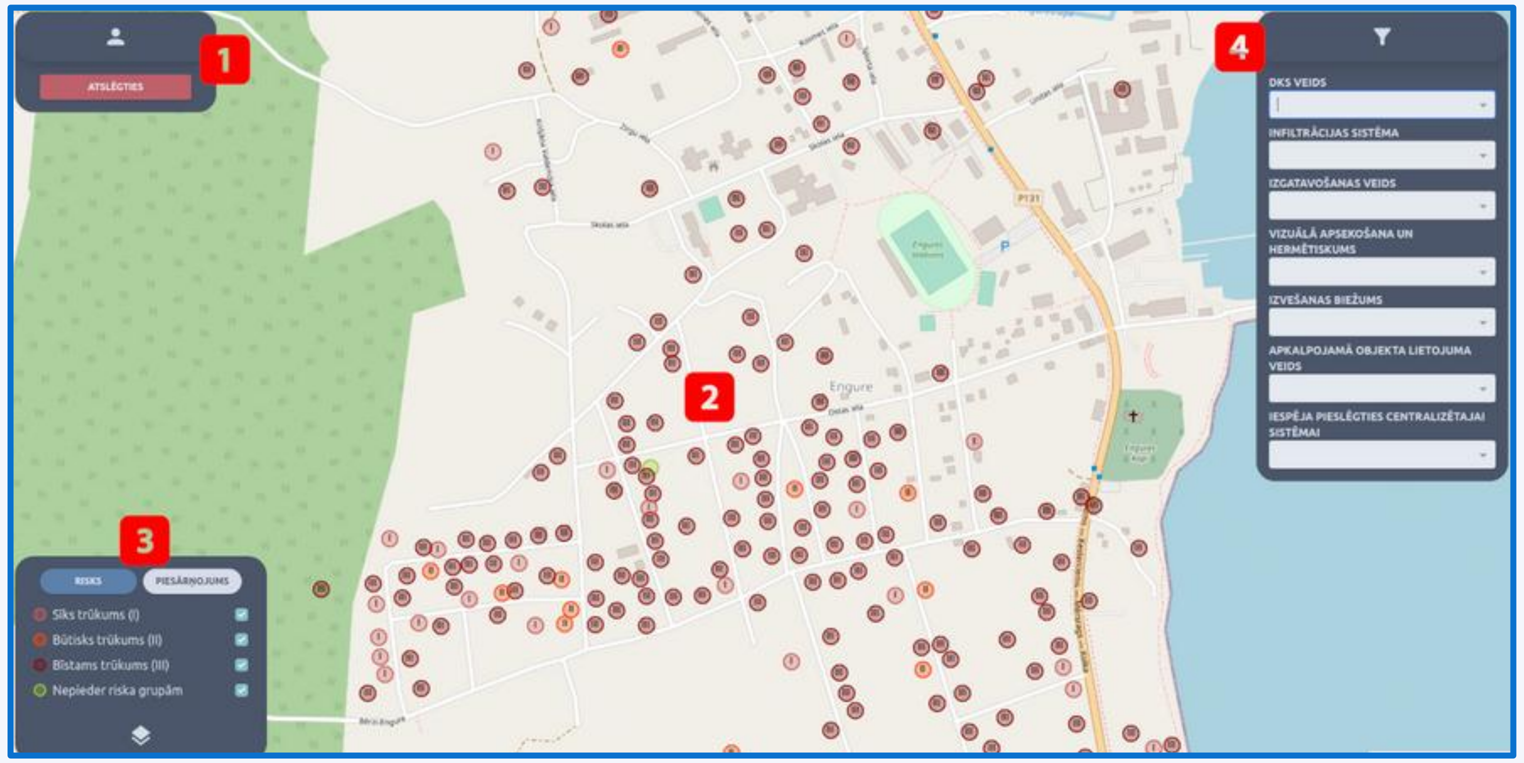


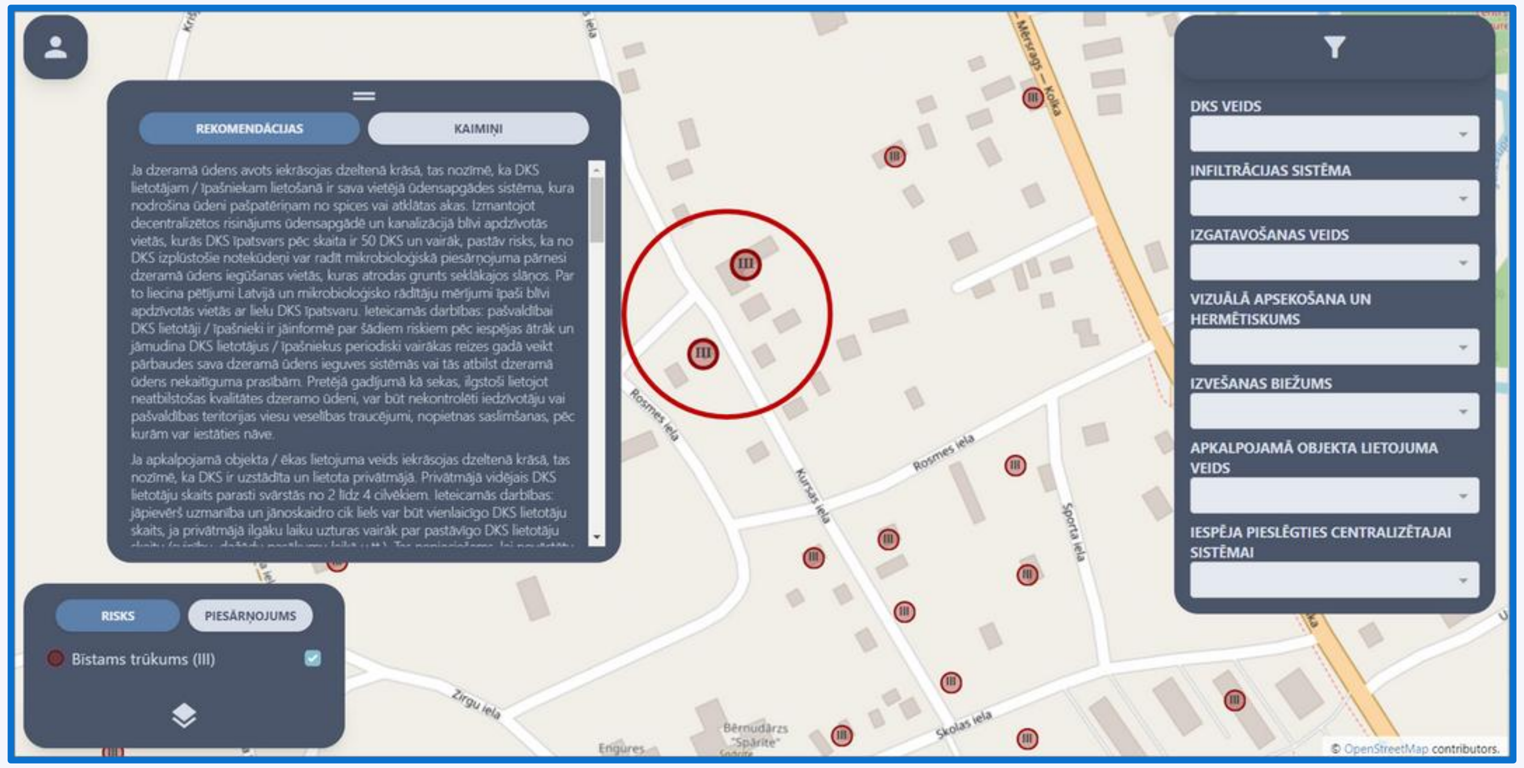
Longitudinal profile

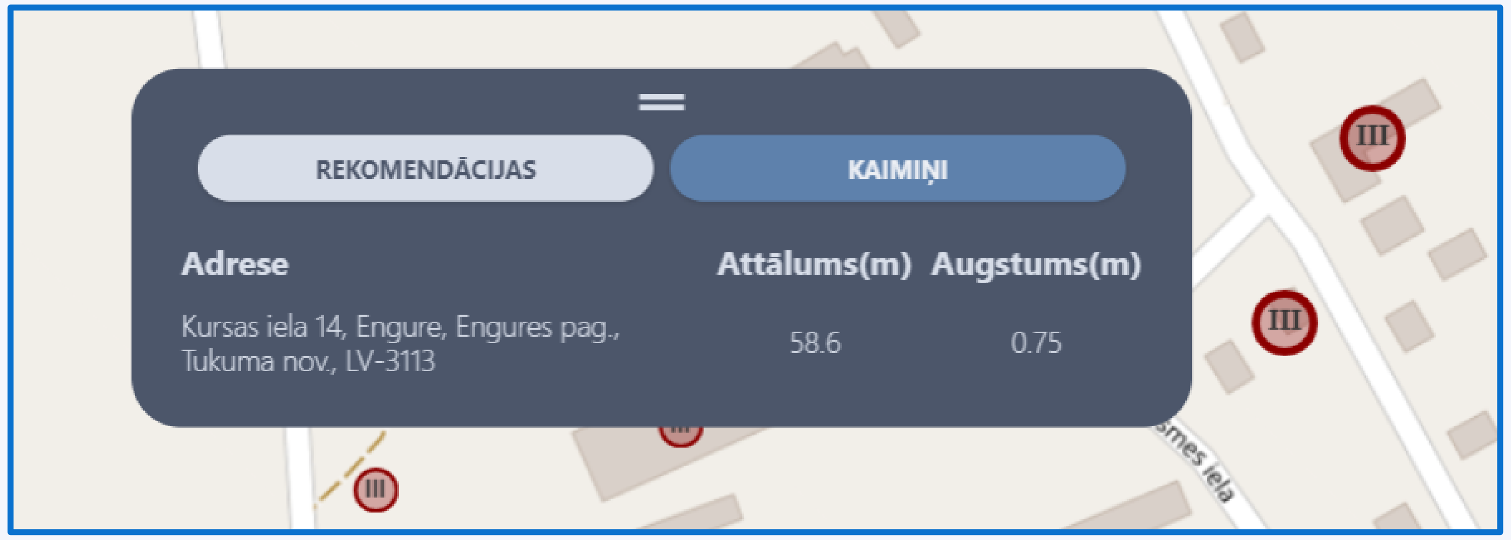
Reduction of pollution with nutrients from agricultural sources – **the surface flow constructed wetland in the Grauzdupe River**

CASE STUDY III

Mathematic model for calculation of the impacts of decentralised sewage systems on groundwater quality







The tool is a Logical Risk Modelling Instrument for policymakers to assess the impacts of Decentralised Sewage Systems (DSS)

Key Outcomes:

Risk Identification:

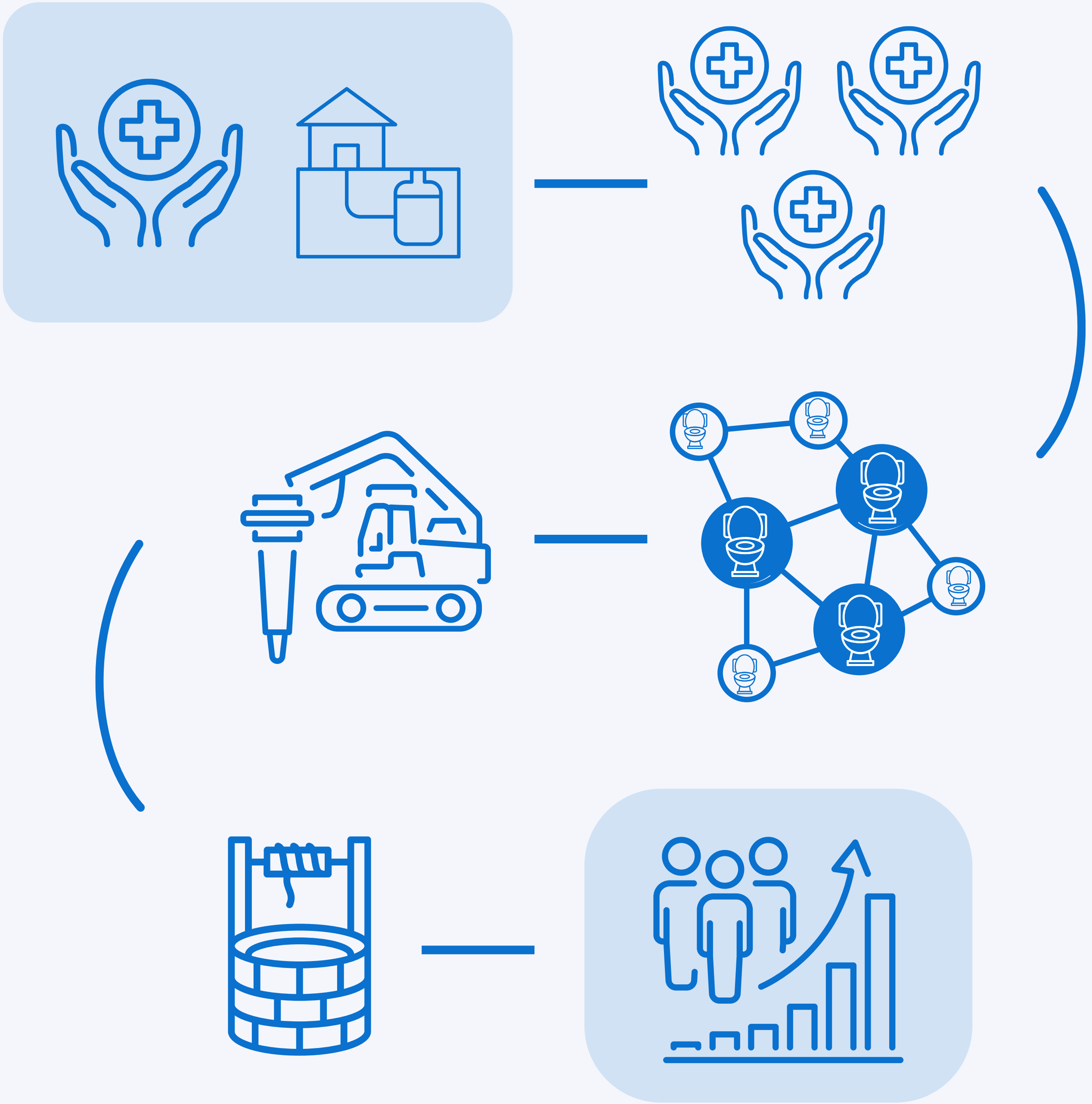
- Pinpoint current and potential environmental pollution and public health risks.

Planning:

- Support selection of the best treatment technologies.
- Determine the need for new centralised sewerage networks.
- Determine areas needing in-depth geological research.

Modeling:

- Model the escalation of pollution scenarios.
- Assess drinking water pollution risks.
- Factor in the impact of tourism/seasonality.



DSS Assesement Data

I Location & Environment

- Proximity Checks: Distances to property boundary, drinking water sources (min 15 m), groundwater abstraction (min 10 m), stagnant water (min 30 m), and running water (min 10 m).
- Site Specifics: Distance to and adequacy of groundwater level. Filtration system ground type.
- Relative Position: Location relative to the neighbours' DSS.

II System Operation & Status

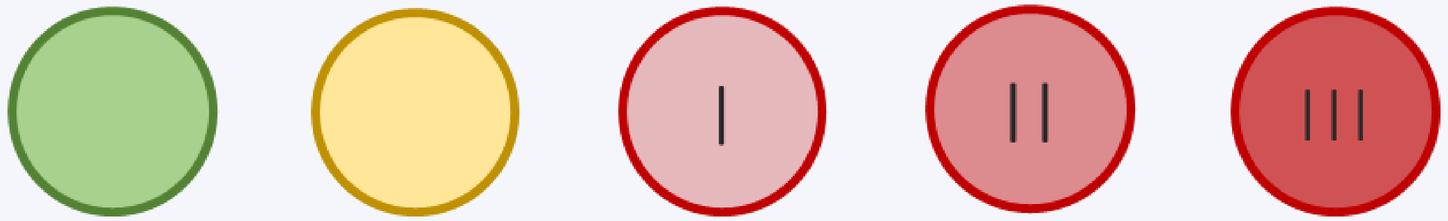
- Capacity & Usage: Declared/Actual population/users. Total volume/flow and capacity adequacy. Volume produced (m3/month).
- Integrity: Visual inspection and leak proofness.
- Documentation: Method of manufacture, technical documentation.
- Maintenance: Frequency of export. Last survey and maintenance dates.

III Context

- Type of building use and source of drinking water.
- Possibility to connect to centralised sewerage.

Risk identification with “traffic light principle”:

The tool provides recommendations & actions to reduce risks:



2 levels (GIS-based):

1. Basic level – input data on sewage system impact (groundwater & surface water)
2. Advanced level – detailed environmental research, incl. background data

User groups:

- Viewer – map clusters
- Authenticated user – detailed DSS overview
- Admin panel – data input