Kick-off Meeting

Sewage sludge management in Latvia-Lithuania: Lielupe river basin demo sites

Kick-off Meeting

Zaragoza, 22-23.11.2023

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NENUPHAR

New governance models to enhance nutrient pollution handling and nutrients recycling

GA n° 101082169

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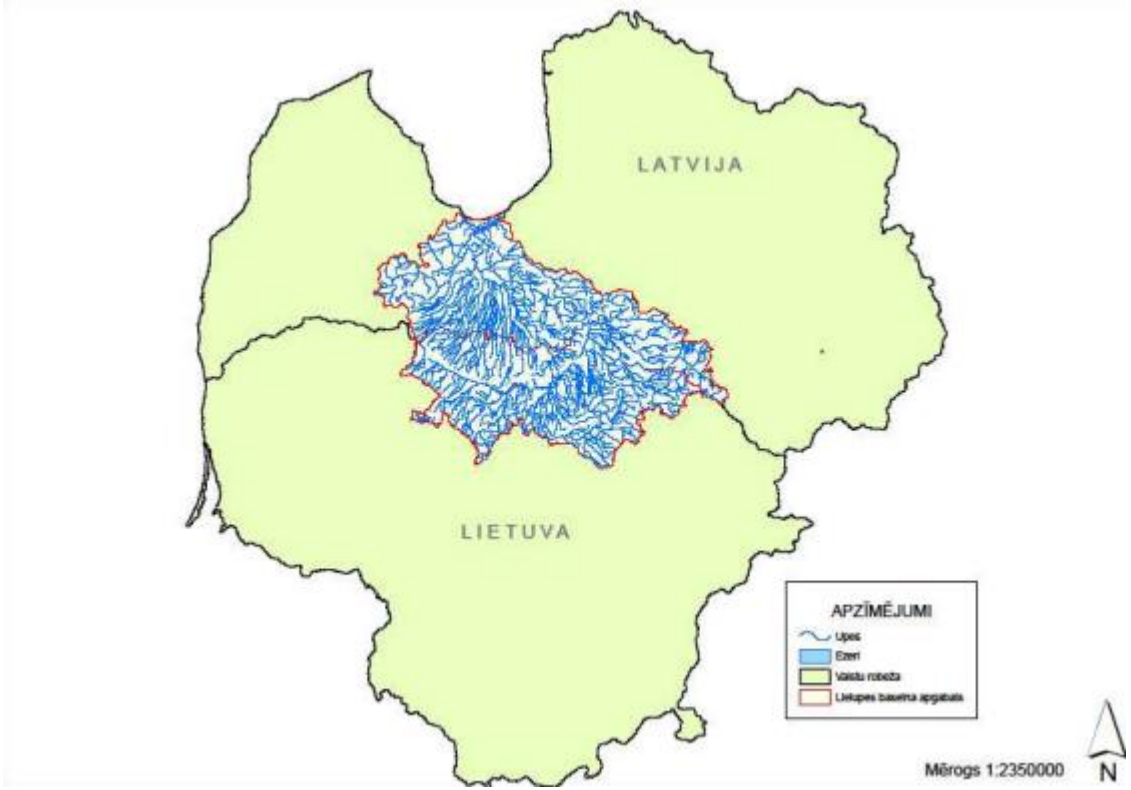
Location: Zemgale and Kurzeme (Latvia) and Siaulau (Lithuania) regions, Lielupe River Basin



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Sewage sludge management in Latvia-Lithuania: Lielupe river basin demo sites

Description: a transboundary river basin shared between Latvia and Lithuania

Sector: Waste management and Agriculture

Targeted stream: Sewage sludge

Dynamic interface: Urban-Rural

Vectors: Soil, water, air

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Main Challenges

- intensive agricultural practices (high soil fertility, favorable climatic conditions)
- increased risks of nutrient losses (appr. 80% of total nitrogen losses and 24% of total phosphorus losses come from agricultural areas in the Lithuanian part of the basin)
- diffuse pollution needs to be addressed by implementation of programmes of measures to reduce undesirable losses of nitrogen and phosphorus from agricultural fields

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Main Challenges

The entire territory of Lithuania is designated as the NVZ, in case of Latvia the major part of the Lielupe River basin is designated as NVZ (Nitrates Directive)

Long-term storage of sewage sludge is a significant environmental problem, as the total amount of sewage sludge placed in long-term storage could exceed the total amount of sewage sludge generated in Latvia within 2-3 years

The only potentially cost-effective way to dispose sewage sludge is to compost it, which can be used for both agricultural and landscaping purposes and by several water management companies in Latvia

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The main idea: to use the sewage sludge which is specially composted for soil improvement with the organic matter and a source of nutrients and microelements promoting its use for small-size farms, since the effects for the usage will be based on monitoring data analysis of the composted sewage sludge.

Sites: six farms (3 in Latvia and 3 in Lithuania) will be selected

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Activities

- Development of a methodology to evaluate the safe ecological conditions for the local ecosystems by monitoring the content of sewage sludge compost, soil, water, and emissions of GHG
- Soil sampling before and after the application of composted sewage sludge in agricultural fields and analysis for agrochemical, microbiological, and heavy metal according national regulation
- Incorporation of various sewage sludge compost in nutrient management plans to model the suitability and ecological conditions for safe application of composted sewage sludge on agricultural fields

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Activities

- Tracing of N as a particularly important nutrient as well as an environmentally sensitive substance from the composted sludge to the soil in terms of nitrogen cycle
- Development of a methodology to calculate the economic value of composted sludge compare with other organic fertilizers for the different types of farms
- Crop yield (grain) sampling and laboratory analysis of chemical parameters
- Development of composted sewage sludge recommendations of the best practice for ecological safe use for the different types of farms and crops

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Partners

- **ZSA**: Demosite coordinator, selection of the pilot farms and implementation of the pilots, development of a methodology for the application of compost, training activities for farmers
- **LBTU:** Monitoring activities in Latvia to evaluate the effects of application of composted sewage sludge on agricultural fields on water, soil, agricultural crops, and emissions of GHG
- **LUKA:** access to the sewage sludge from the public water service providers and companies providing services and goods related to the water supply and sewerage sector

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Partners

- **NRDA:** Cooperation with local stakeholders and governmental organisation in Lithuania, improve sewage sludge providers competences and inclusion in the project, awareness and knowledge transfer among local stakeholders
- **VMU:** Monitoring activities in Lithuania to evaluate the effects of application of composted sewage sludge on agricultural fields on water, soil, agricultural crops

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Targets/milestones

- Application of composted sludge as an organic fertilizer will reduce application of mineral fertilizers by 10% at the farms involved in the demonstration activities
- Improved understanding about the concepts of circular economy and examples of good practices for nutrient management in agricultural fields
- Supporting recovery of nutrients from sewage sludge as part of the circular economy
- Expanding understanding and awareness of the nutrient cycle among farmers
- The number of farmers who have prevented potential leakage of nutrient will be expanded

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THANK YOU!

Questions?

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