LIFE OrgBalt project at a glance: from scope to the results

National seminar
Lithuania

April 19th 2024, MS Teams

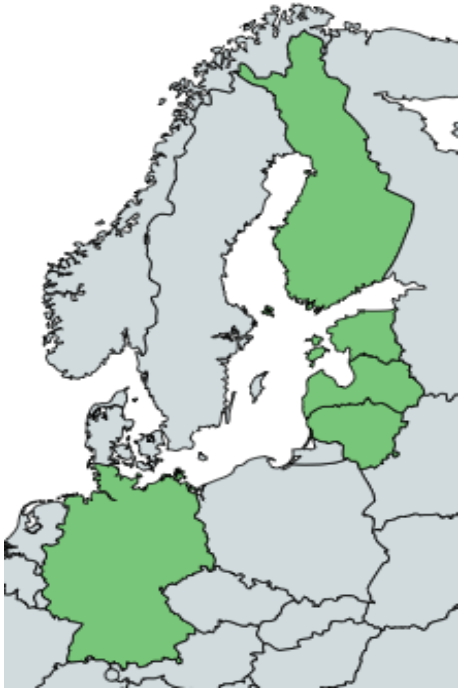
Latvian State Forest Research Institute "Silava" (Ieva Līcīte)

LIFE OrgBalt, LIFE18 CCM/LV/001158

EU LIFE Programme project
"Demonstration of climate change mitigation potential of nutrients rich organic soils in Baltic States and Finland"

LIFE OrgBalt "Demonstration of climate change mitigation potential of nutrients rich organic soils in Baltic States and Finland"

5 countries



8 partners

Latvia	LSFRI "Silava"
	LBTU
	MoA
	Baltic Coasts
Lithuania	LAMMC
Estonia	University of Tartu
Finland	Luke
Germany	MSF

Project duration: 01/08/19 - 31/08/24

Total budget: 3 360 948 EUR, **EU funding**: 54,87%

The research rationale: filling the knowledge "gaps" about organic soil management for mitigating climate change in the Baltic States and Finland

- organic soil in the EU is found in approximately 33.6 million ha, which is about 7% of the total land area of the *;
- although organic soil can be found only on **~ 3%** (4.4 million ha) of European agricultural land, its management accounts for **~ 25%** of the agricultural sector's GHG emissions*;
- drained organic soil is one of the largest sources of GHG emissions in the agricultural and LULUCF sectors in boreal and temperate cool, moist climate regions in Europe*.

*European Environmental Agency (2020), EU GHG inventory 1990-2018, submission 27 May 2020

The main idea and goals

Idea: Improve GHG inventory and demonstrate climate change mitigation measures for organic soil management in cropland, grassland and forest land. **Scope**: agriculture and forest land.

Goals:

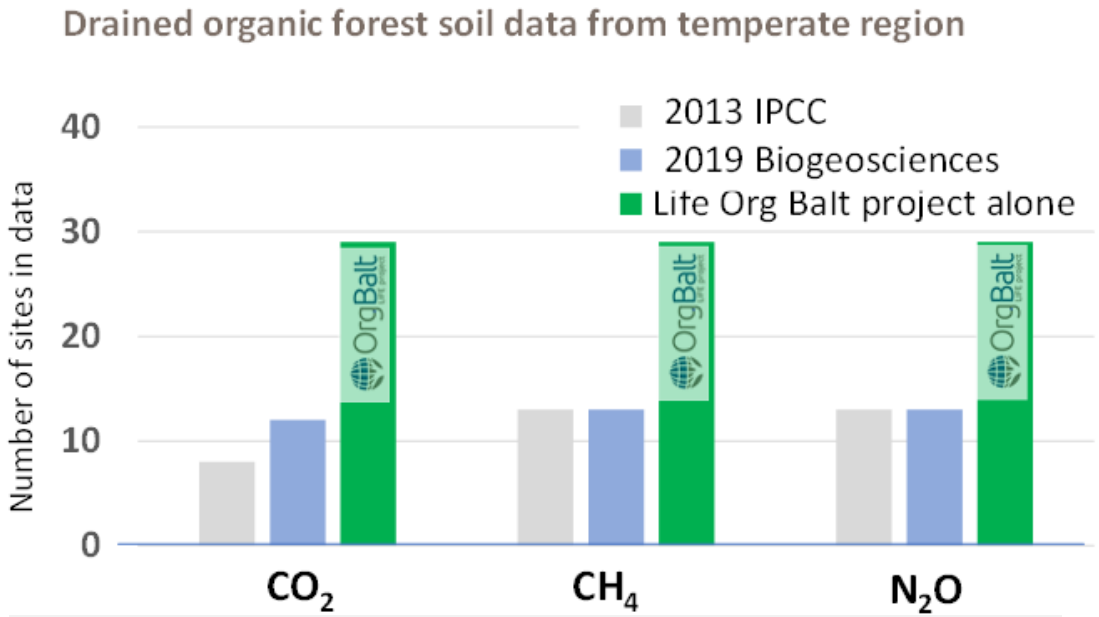
✓ GHG inventory improvements – project territory specific activity data and GHG emission factors;

✓ Identification and demonstration of cost-effective climate change mitigation measures in organic soil management;

✓ Tools and proposals for impact assessment of climate change mitigation measures and inclusion of the measures in policy documents.

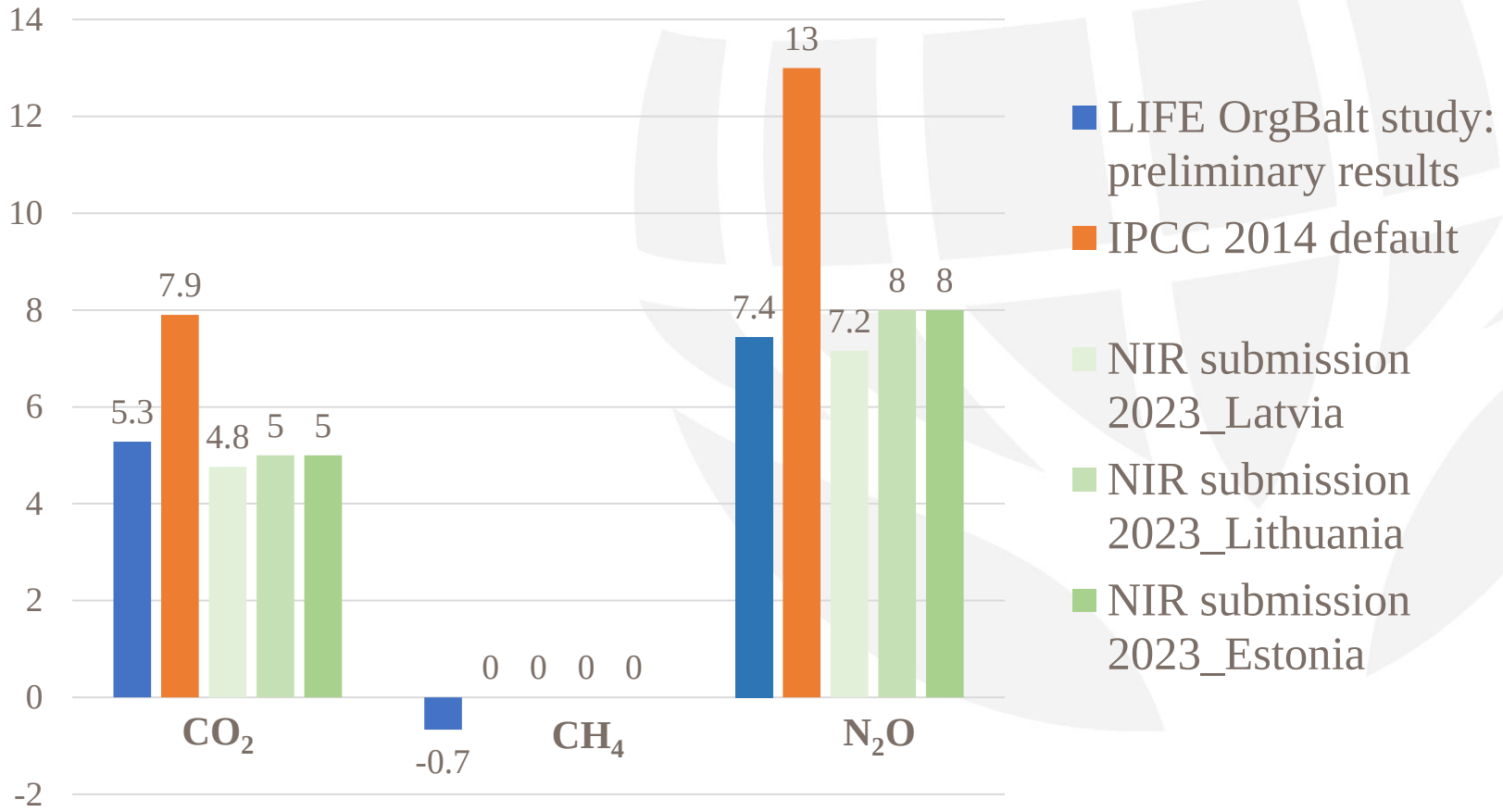
Main results of the LIFE OrgBalt project

- ✓**Filling knowledge "gaps" by developing and publishing regional GHG emission factors.**



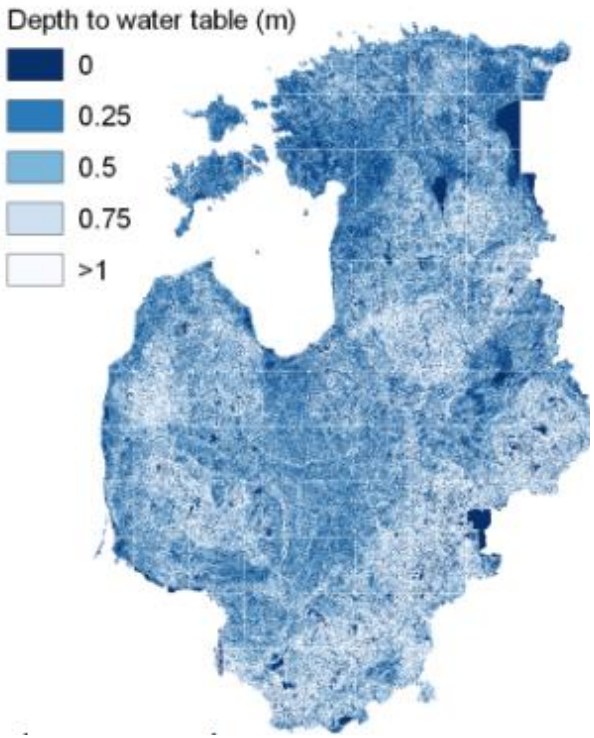
LIFE OrgBalt measurements (2 full years) in:
Estonia – 10 reference sites;
Finland – 8 reference and demonstration sites;
Latvia – 29 reference and demonstration sites;
Lithuania – 10 reference sites.

Annual drained organic soil GHG emission factors for cropland – as an example



Main results of the LIFE OrgBalt project

✓**Filling knowledge "gaps" on activity data by developing depth to water and wet area maps – modelling.**



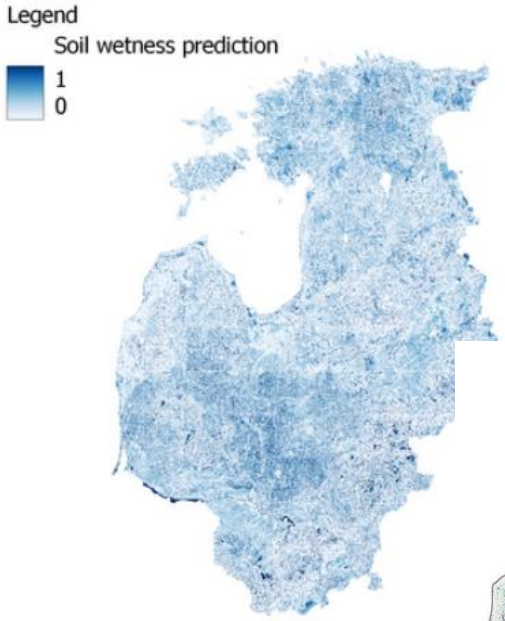
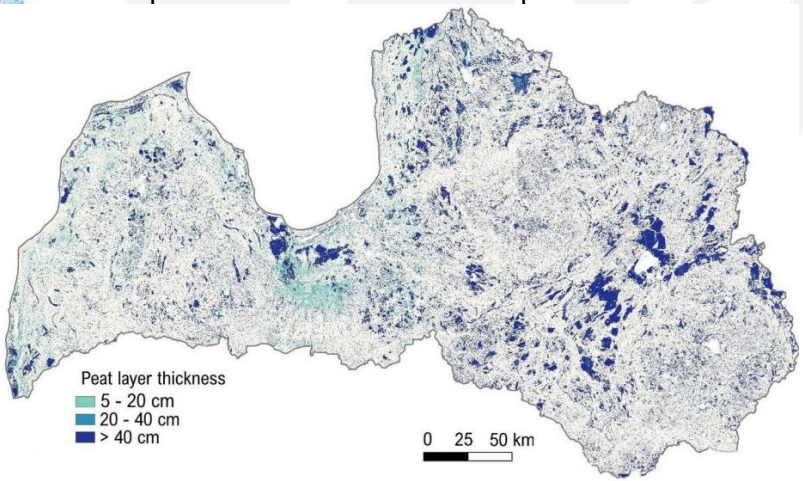


Figure 1. Wet area map

Maps are available as WMS service: https://silava.forestradar.com/geoserver/silava/wms

Modelling of organic soil spatial distribution based on depth to water and wet area maps.



Methodology: Ivanovs, J., Lupikis, A. (2018). Identification of wet areas in forest using remote sensing data. Agronomy Research 16(5), 2049-2055. https://doi.org/10.15169/AR.18.192
Murphy, P.N.C. et al. (2008). Improving forest operations planning through high-resolution flow-channel and wet-areas mapping. The Forestry Chronicle, 84(4) https://pubs.cif-ifc.org/doi/pdf/10.5558/tfc84568-4

Ivanovs, J., Haberl, A., Melniks, R. (2024). Modeling Geospatial Distribution of Peat Layer Thickness Using Machine Learning and Aerial Laser Scanning Data. *Land*, *13(4), 466*. https://doi.org/10.3390/land13040466

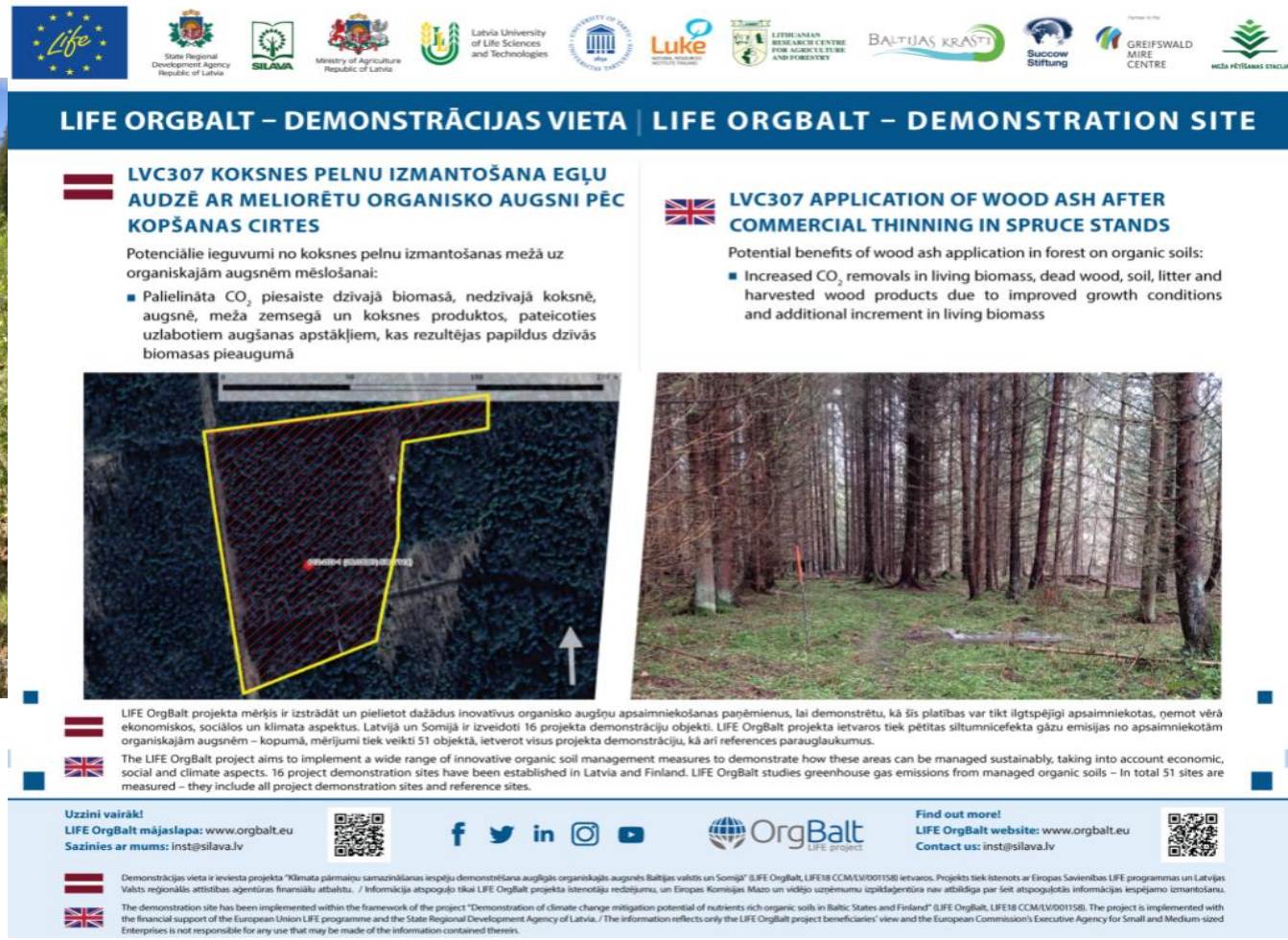
OrgBalt LIFE project

EU LIFE Programme project "Demonstration of climate change mitigation potential of nutrients rich organic soils in Baltic States and Finland"

Main results of the LIFE OrgBalt project

✓Demonstration of climate change mitigation measures

17 demonstration sites in Latvia (forest and agriculture) and Finland (forest).



Main results of the LIFE OrgBalt project

✓**Scenarious identified and tested – a variety measures incl.**

- In forest land – forest paludiculture with black alder and birch, agroforestry practices (fast growing trees and grass), afforestation, continuous forest cover, strip harvesting, regeneration of felling site without reconstruction of drainage systems, wood ash application after commercial thinning;
- In agriculture land – conversion of cropland to grassland, controlled drainage of grassland, legumes in farm crop rotation, fast growing species in riparian buffer zones.

Main results of the LIFE OrgBalt project

✓Replicability tools – tools for impact assessment of CCM measures and decision support for inclusion of the measures in policy documents

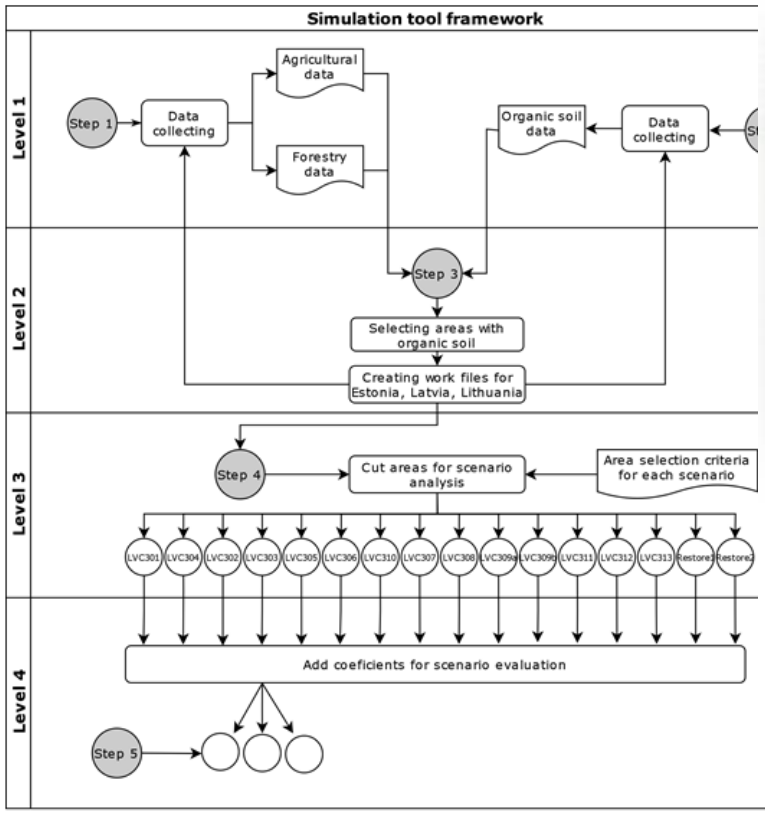
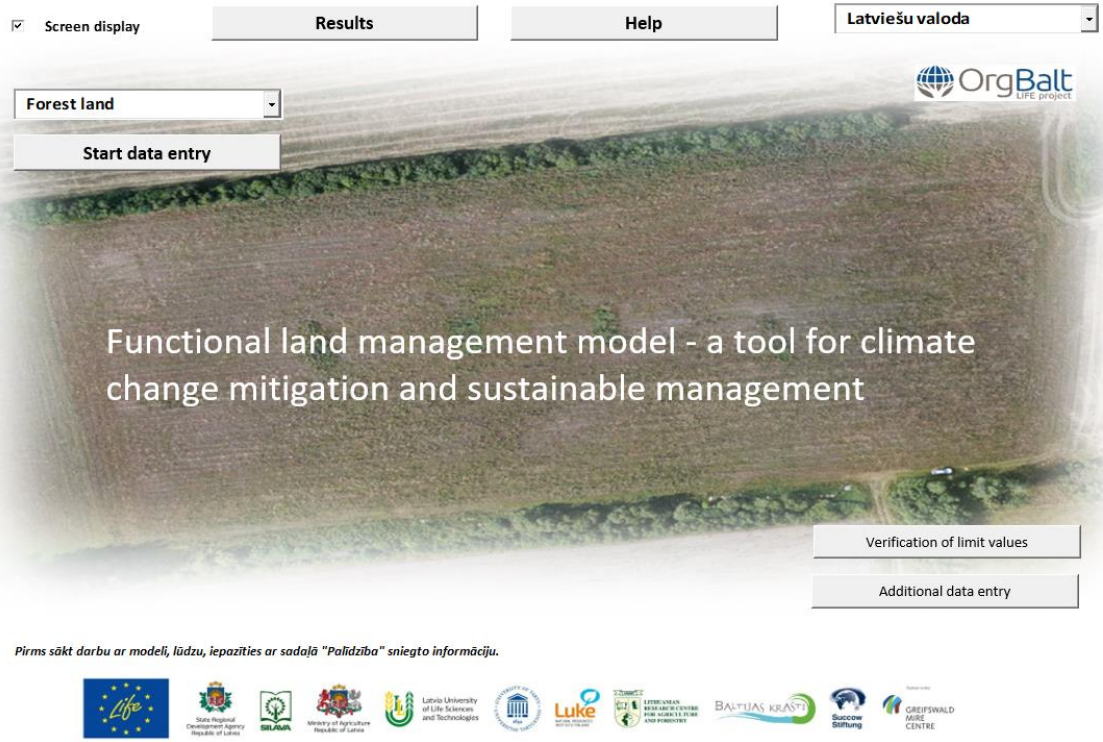


Figure 1. The flowchart of Simulation tool.



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Thank you!

We invite you to participate in the **LIFE OrgBalt project's final conference** at the University of Latvia Academic Centre in Riga and online on 13. -14. of June 2024!!

More infromation: https://www.orgbalt.eu

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The project "Demonstration of climate change mitigation potential of nutrients rich organic soils in Baltic States and Finland" (LIFE OrgBalt, LIFE18 CCM/LV/001158) has received funding from the LIFE Programme of the European Union and the State Regional Development Agency of Latvia. www.orgbalt.eu

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