



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

National seminar
Lithuania

April 19th 2024, MS Teams

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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"



Latvia University
of Life Sciences
and Technologies



LITHUANIAN
RESEARCH CENTRE
FOR AGRICULTURE
AND FORESTRY



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.

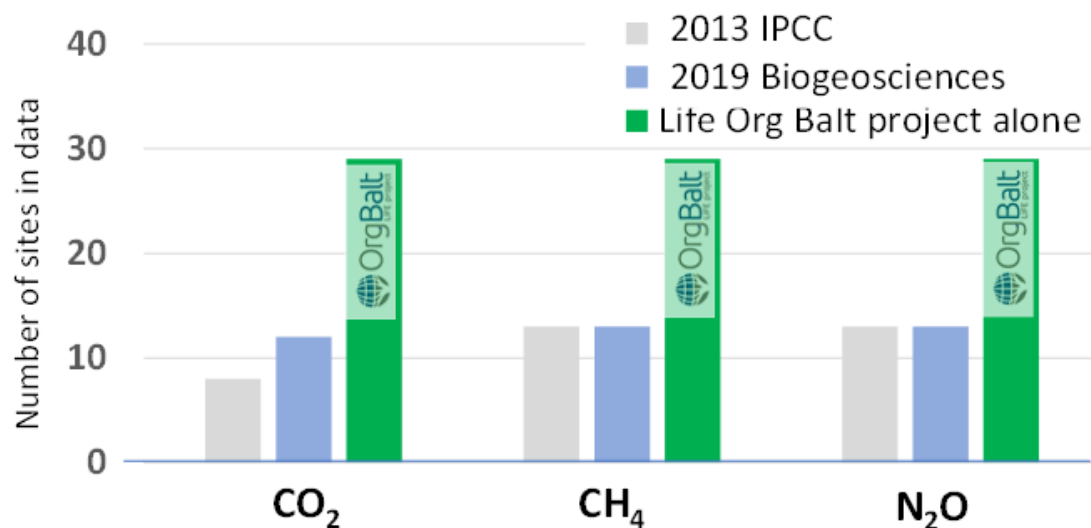
Goals:

- ✓ 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.

Drained organic forest soil data from temperate region

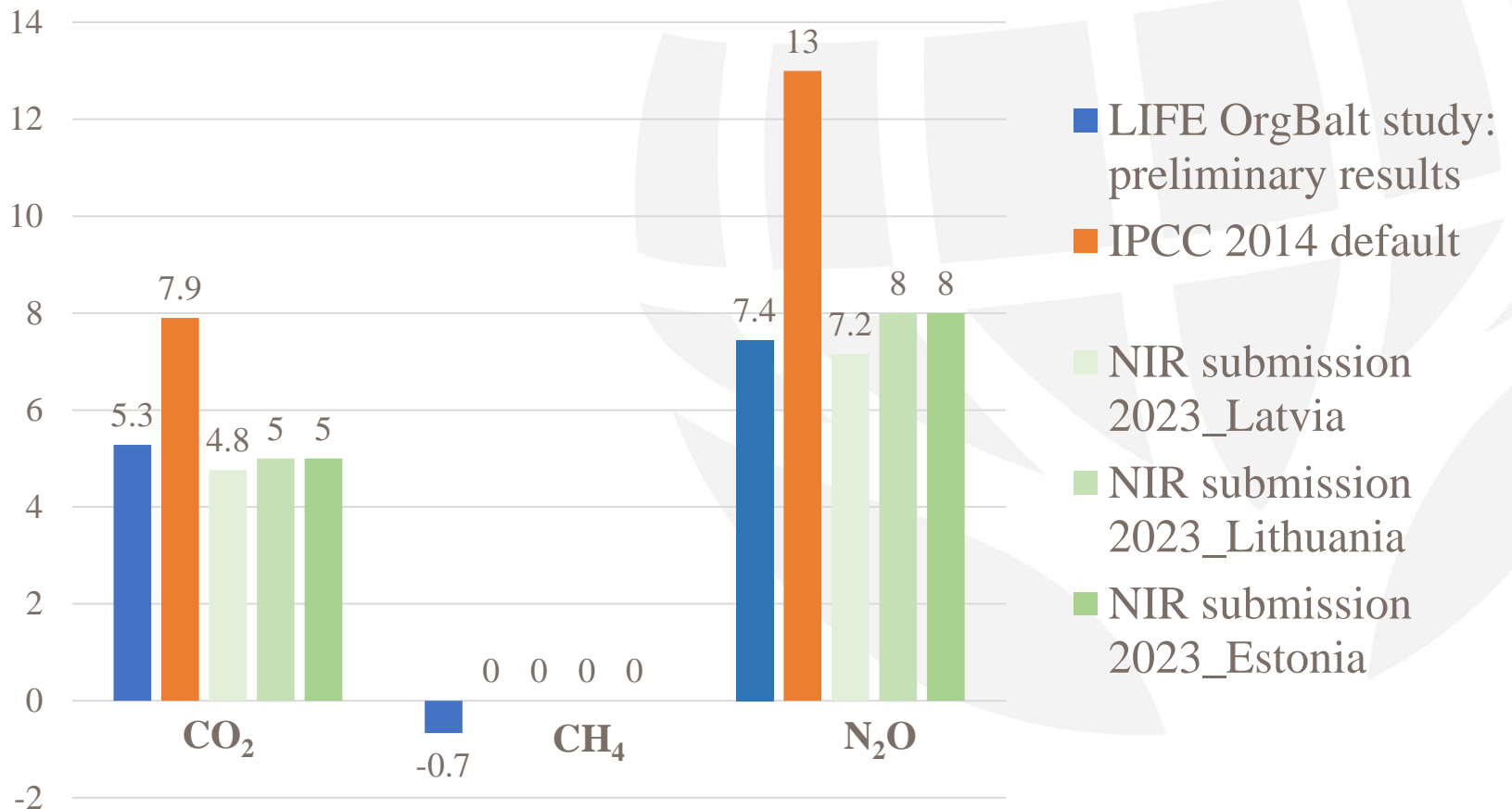


LIFE OrgBalt measurements (2 full years) in:

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.

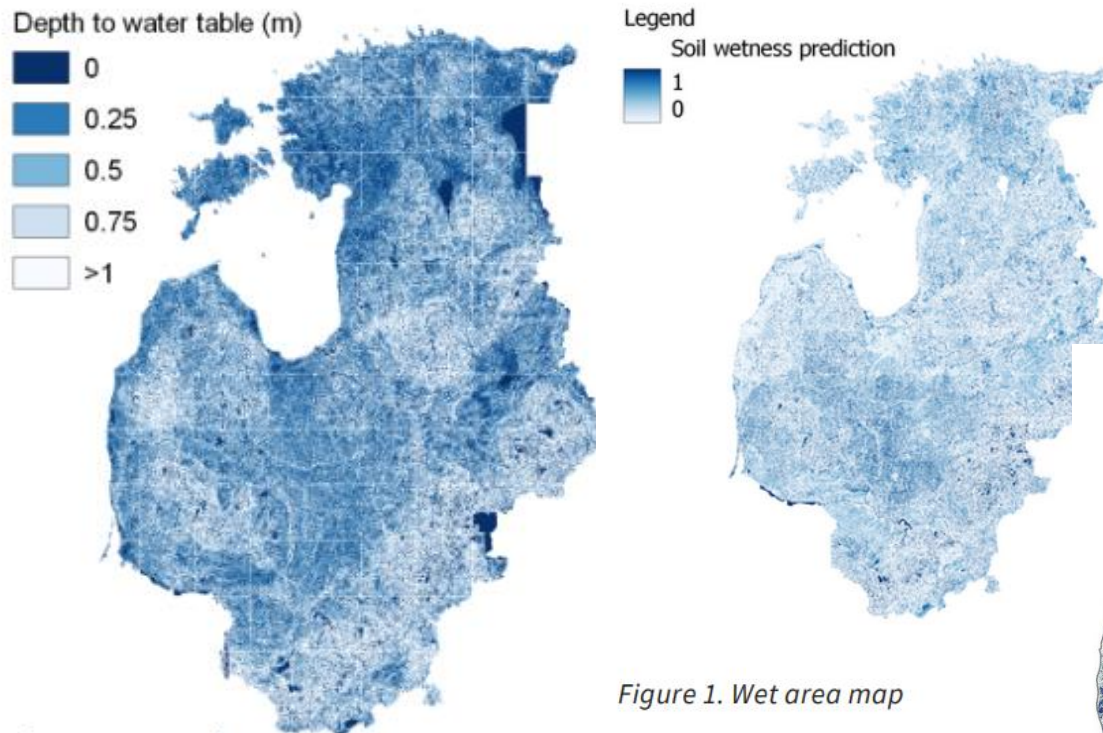


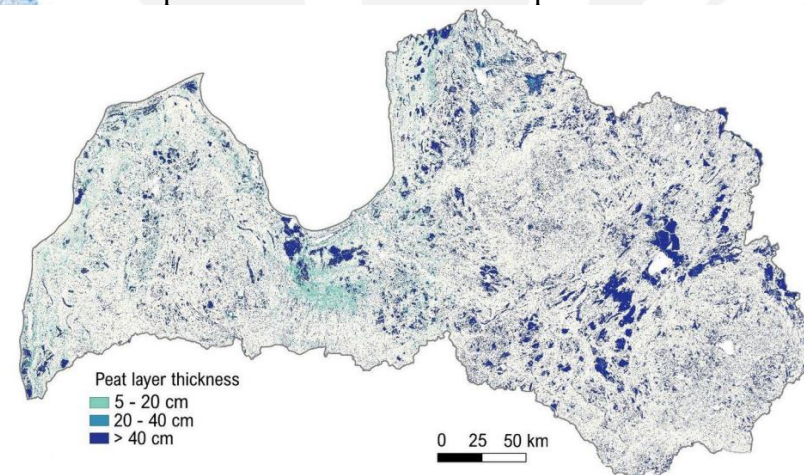
Figure 1. Wet area map

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>

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.















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>

Main results of the LIFE OrgBalt project

✓ Demonstration of climate change mitigation measures



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

LIFE ORGBALT – DEMONSTRĀCIJAS VIETA | LIFE ORGBALT – DEMONSTRATION SITE

LVC307 KOKSNES PELNU IZMANTOŠANA EGĻU AUDŽĒ AR MELIORĒTU ORGANISKO AUGSNI PĒC KOPŠANAS CIRTES



Potenciālie ieguvumi no koksnes pelnu izmantošanas mežā uz organiskajām augsnēm mēslošanai:

- Palielināta CO₂ piesaiste dzīvajā biomasā, nedzīvajā koksnē, augsnē, meža zemsegā un koksnes produktos, pateicoties uzlabotiem augšanas apstākļiem, kas rezultējas papildus dzīvās biomasas pieaugumā

LVC307 APPLICATION OF WOOD ASH AFTER COMMERCIAL THINNING IN SPRUCE STANDS

Potential benefits of wood ash application in forest on organic soils:


- Increased CO₂ removals in living biomass, dead wood, soil, litter and harvested wood products due to improved growth conditions and additional increment in living biomass










LIFE OrgBalt projekta mērķis ir izstrādāt un pielietot dažādus inovatīvus organisko augšņu apsaimniekošanas pasākumus, lai demonstrētu, kā šīs platības var tikt ilgtspējīgi apsaimniekotas, ņemot vērā ekonomiskos, sociālos un klimata aspektus. Latvijā un Somijā ir izveidoti 16 projekta demonstrāciju objekti. LIFE OrgBalt projekta ietvaros tiek pētītas siltumnīcefekta gāzu emisijas no apsaimniekotām organiskajām augsnēm – kopumā, mērījumi tiek veikti 51 objektā, ietverot visus projekta demonstrāciju, kā arī references parauglaukumus.

The LIFE OrgBalt project aims to implement a wide range of innovative organic soil management measures to demonstrate how these areas can be managed sustainably, taking into account economic, social and climate aspects. 16 project demonstration sites have been established in Latvia and Finland. LIFE OrgBalt studies greenhouse gas emissions from managed organic soils – In total 51 sites are measured – they include all project demonstration sites and reference sites.


Uzzini vairāk!
LIFE OrgBalt mājaslapa: www.orgbalt.eu
Sazinies ar mums: inst@silava.lv





Find out more!
LIFE OrgBalt website: www.orgbalt.eu
Contact us: inst@silava.lv



Demonstrācijas vieta ir ieviesta projekta "Klimata pārmaiņu samazināšanas iespēju demonstrēšana auglīgās organiskajās augsnēs Baltijas valstīs un Somijā" (LIFE OrgBalt, LIFE18 CCM/LV/001158) ietvaros. Projekts tiek īstenots ar Eiropas Savienības LIFE programmas un Latvijas Valsts reģionālās attīstības aģentūras finansālu atbalstu. / Informācija atspoguļo tikai LIFE OrgBalt projekta īstenotāju redzējumu, un Eiropas Komisijas Mazo un vidējo uzņēmumu uzskaitēģitūra nav atbildīga par šeit atspoguļotās informācijas iespējamo izmantošanu.

The demonstration site has been implemented within the framework of the project "Demonstration of climate change mitigation potential of nutrients rich organic soils in Baltic States and Finland" (LIFE OrgBalt, LIFE18 CCM/LV/001158). The project is implemented with the financial support of the European Union LIFE programme and the State Regional Development Agency of Latvia. / The information reflects only the LIFE OrgBalt project beneficiaries' view and the European Commission's Executive Agency for Small and Medium-sized Enterprises is not responsible for any use that may be made of the information contained therein.

Main results of the LIFE OrgBalt project

✓ Scenarios 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**

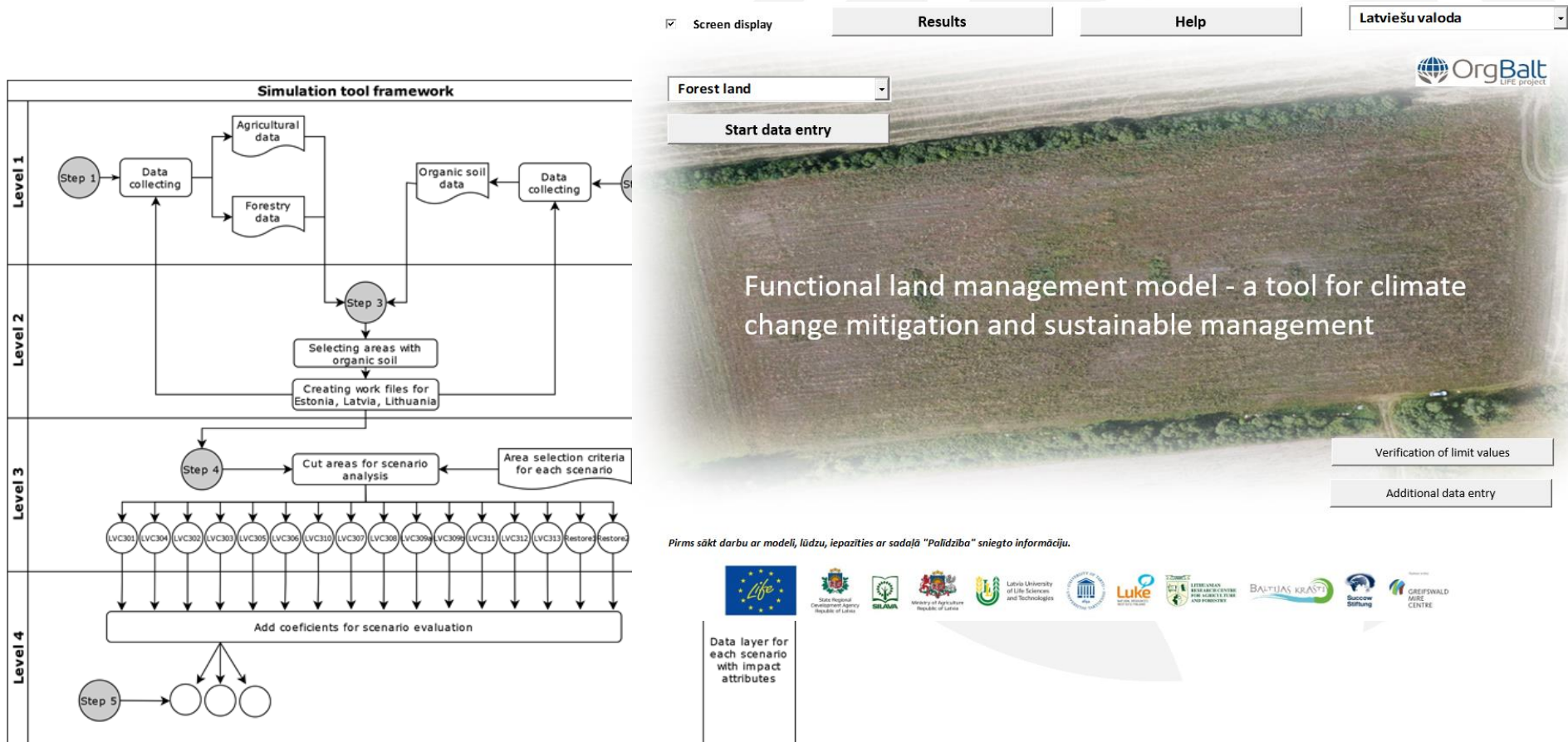


Figure 1. The flowchart of Simulation tool.

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 information: <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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