



# LIFE OrgBalt project

## General project information

12<sup>th</sup> of April, 2024

Expert seminar and National workshop – Germany

MS Teams platform

*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.

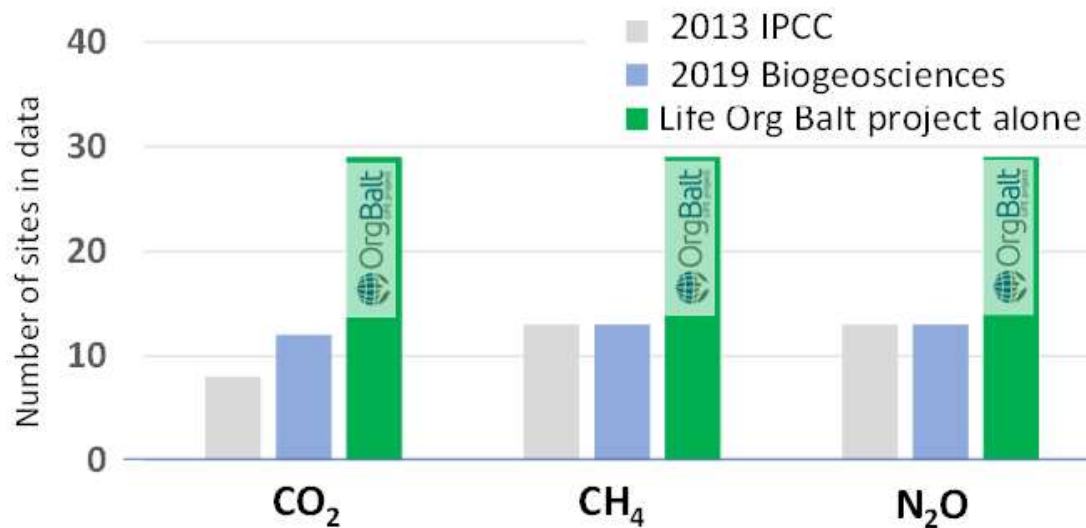
### Goals:

- ✓ GHG inventory improvements – project territory specific activity data and GHG emission factors;
- ✓ Identification and demonstration of 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

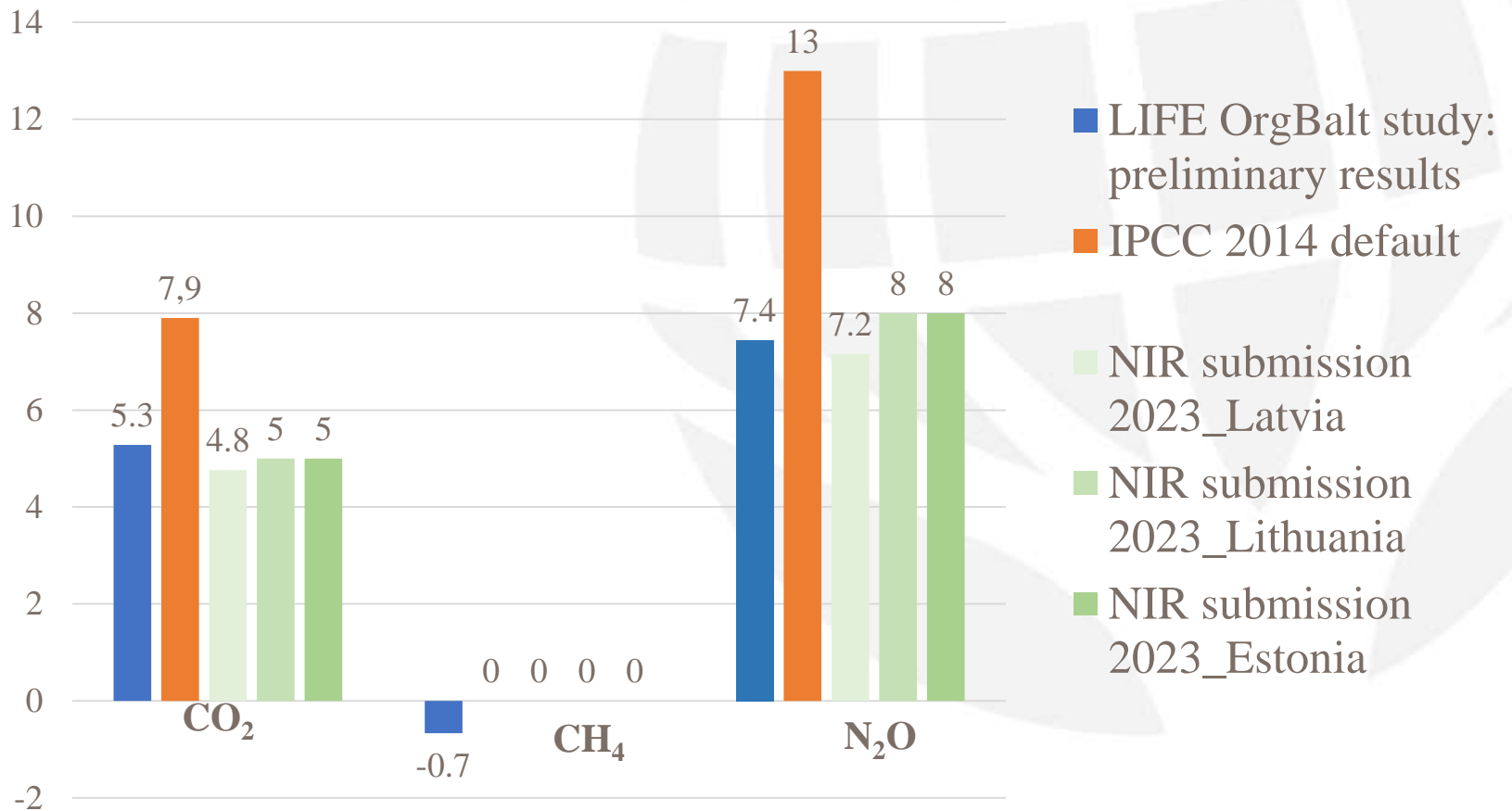


## LIFE OrgBalt measurements (2 full years) in:

- 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.

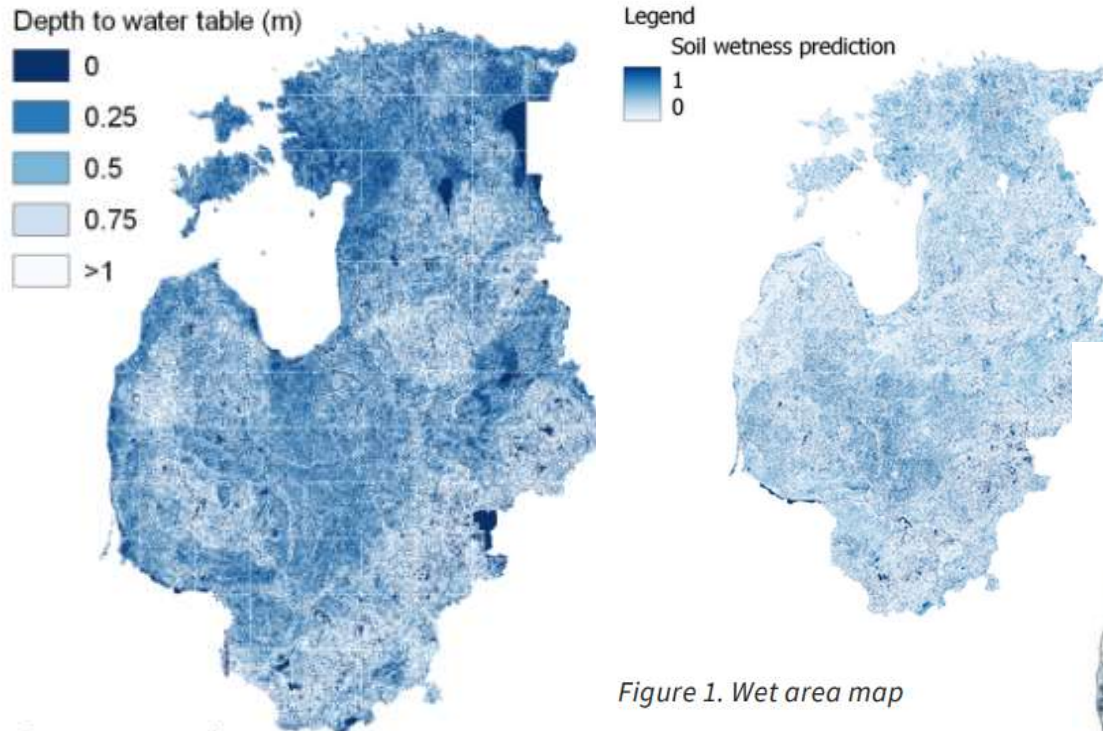


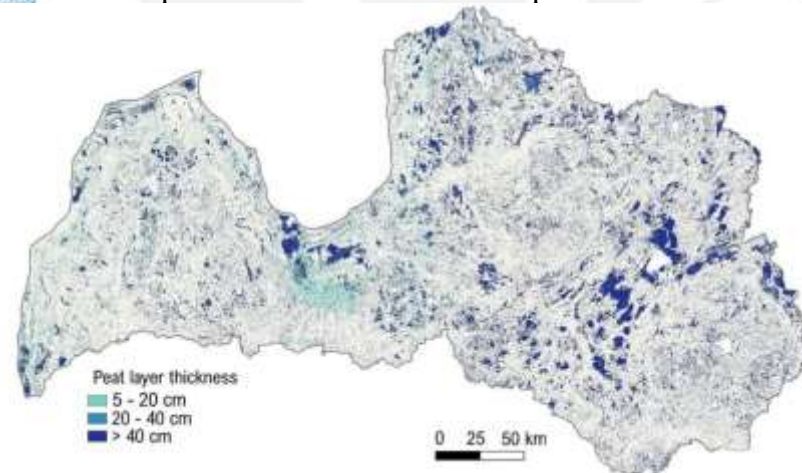
Figure 1. Wet area map

**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 AUDŽĀ AR MELIORĒTU ORGANISKO AUGSNI PĒC KOPŠANAS CIRTES**

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

- Palielināta CO<sub>2</sub> piesaiste dzīvajā biomasā, nedzīvajā koksnē, augsnē, meža zemesgā 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 CO<sub>2</sub> removals in living biomass, dead wood, soil, litter and harvested wood products due to improved growth conditions and additional increment in living biomass



**Uzzini vairāk!**  
**LIFE OrgBalt mājaslapa:** [www.orgbalt.eu](http://www.orgbalt.eu)  
**Saasinies ar mums:** [inst@silava.lv](mailto:inst@silava.lv)

**Fināliet mērķi!**  
**LIFE OrgBalt mājaslapa:** [www.orgbalt.eu](http://www.orgbalt.eu)  
**Contact us:** [inst@silava.lv](mailto:inst@silava.lv)



# 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**

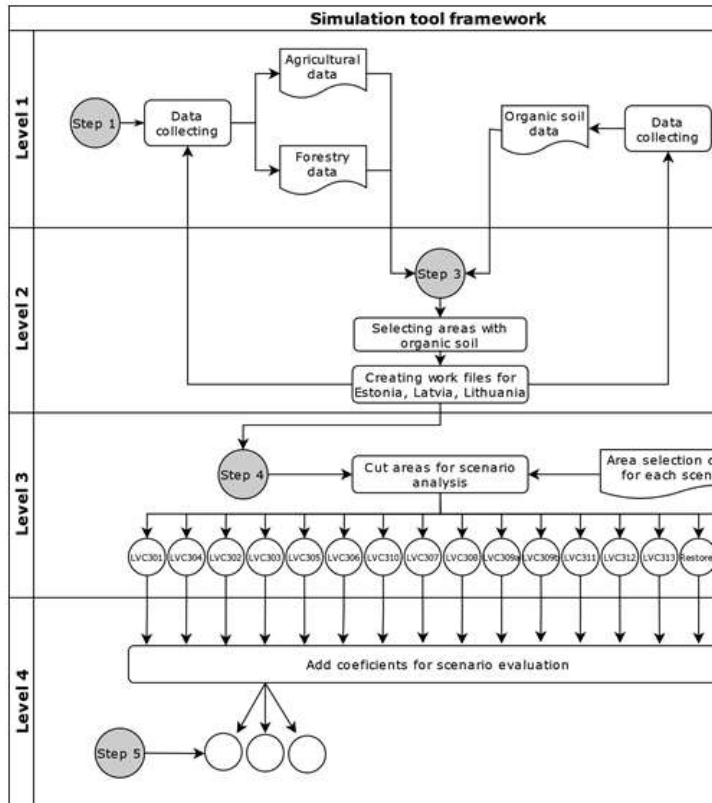


Figure 1. The flowchart of Simulation tool.

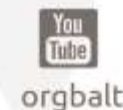


each scenario with impact attributes

# 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 and registration: <https://www.orgbalt.eu>**



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](https://www.orgbalt.eu)

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