



Preliminary results from LIFE OrgBalt project

Side event “Organic soils and peatlands in the Baltic countries:
Mitigation measures & monitoring, paludiculture and Carbon farming
approaches ”

Global Peatland Pavilion, COP26
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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



LIFE OrgBalt "Demonstration of climate change mitigation potential of nutrients rich organic soils in Baltic States and Finland" (LIFE18 CCM/LV/001158)

5 countries



8 partners

Latvia

LSFRI Silava

LLU

Ministry of Agriculture

Baltic Coasts

Lithuania

LAMMC

Estonia

Tartu university

Finland

LUKE

Germany

MSF

Project duration: 01/08/19 - 31/08/23

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

The main idea: improvement of organic soil management for contribution to climate change mitigation

Why it is important?

- ❑ Area of drainage based, flooded and rewetted managed organic soils in EU is 33.6 Mha (7% of the EU area);
- ❑ ~ 3% of EU's agriculture land is on organic soils, but these soils are responsible for 25% of all agricultural GHG emissions;
- ❑ LIFE OrgBalt focuses on the most common group of organic soils – nutrient-rich drained organic soils in temperate climate region (cover 21 Mha or 61% of organic soils in EU countries).

How to?

Scope: nutrient-rich drained organic soils in forest and agriculture land.

Targets:

- ✓ **GHG inventory improvements** – inclusion of better project territory specific activity data and emission factors;
- ✓ **Demonstration of GHG mitigation measures** – identification and practical demonstration of cost effective climate change mitigation measures;
- ✓ **Policy uptake**– tools for analysis and projections of climate change mitigation impacts and proposals for inclusion of the project measures into national policy planning documents.

GHG inventory improvements

✓ **Project territory specific GHG emission factors**

Calculations based on GHG (CO_2 , N_2O , CH_4) and environmental data (soil/water sampling and analysis, living biomass, litter production and decomposition, meteorological parameters, root ingrowth, soil infrared spectroscopy tests) measurements in demonstration and reference sites.

Measurements performed within 24 month period (2021-2022) in 17 demonstration sites and 34 reference sites in Baltic States and Finland.

Outcome – climate sensitive, regionally specific GHG emission factors attributed to different organic soil management strategies.

GHG inventory improvements

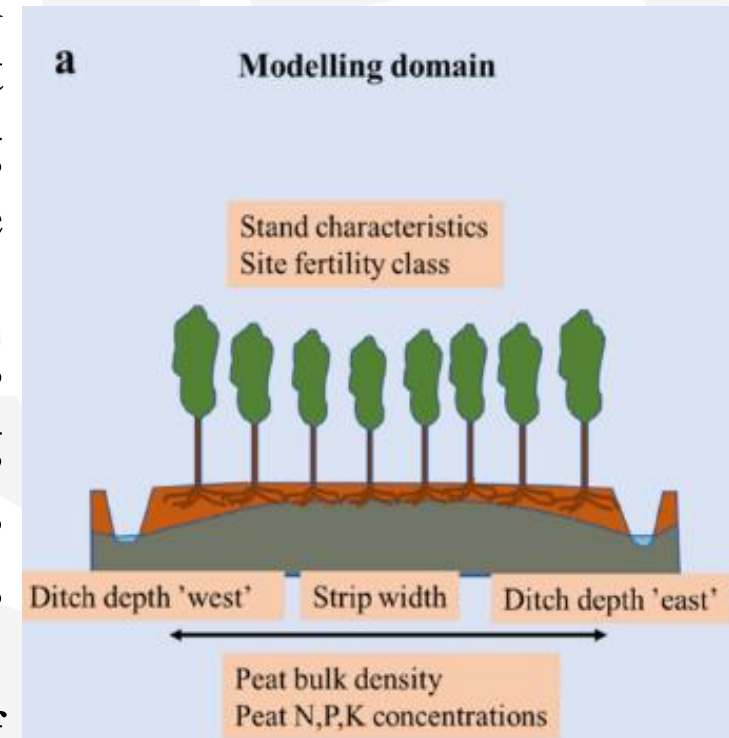


Improvements of GHG inventory

✓ Activity data modelling

Enhanced activity data – GHG emission calculation, projections and impact evaluation of CCM measures. Modelling estimations where actual measurements are not available.

Mainly remote analysis and modelling tools incl. **SUSI Peatland simulator** – modelling tool for water table estimation, projections of GHG emission levels in organic soils and comparing of management options. Allows remote evaluation of importance of 21 Mha of nutrient-rich drained organic soils in the EU countries.



Improvements of GHG inventory

✓ Activity data modelling

Current result – **depth to water maps for Baltic States.**

Spatial info about wet soil and seasonal streams distribution – support data for determination of organic soil distribution more accurately.

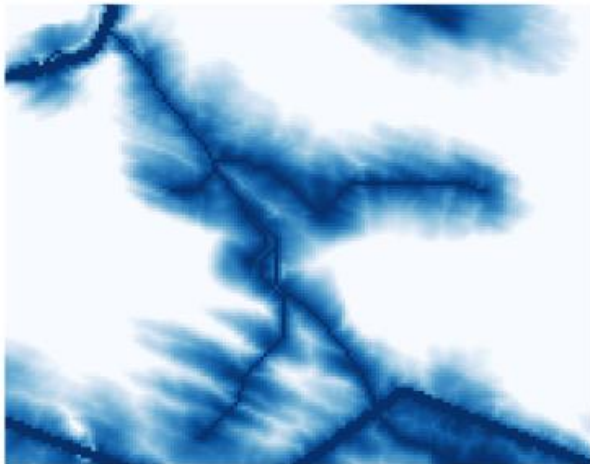
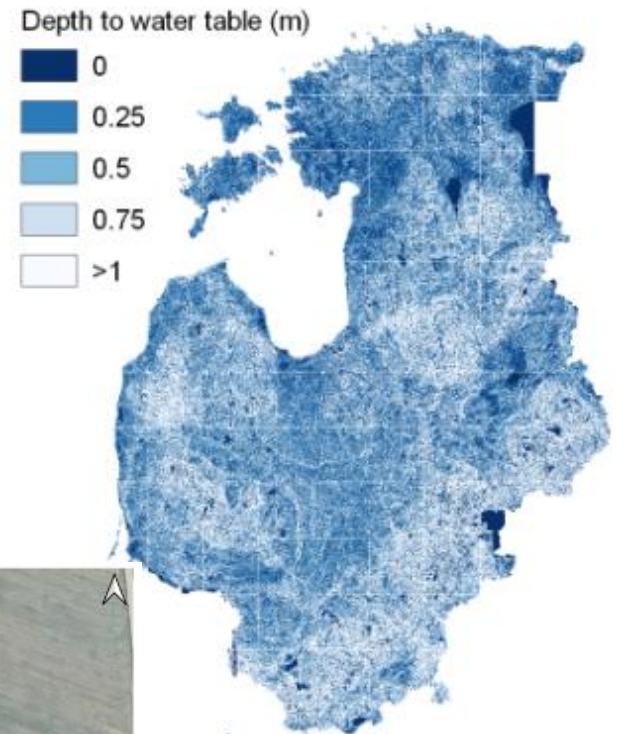
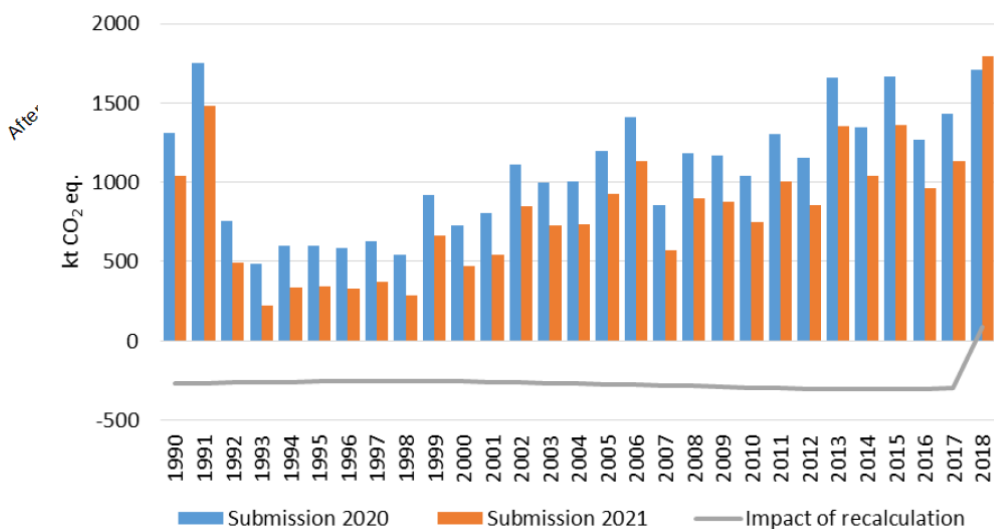
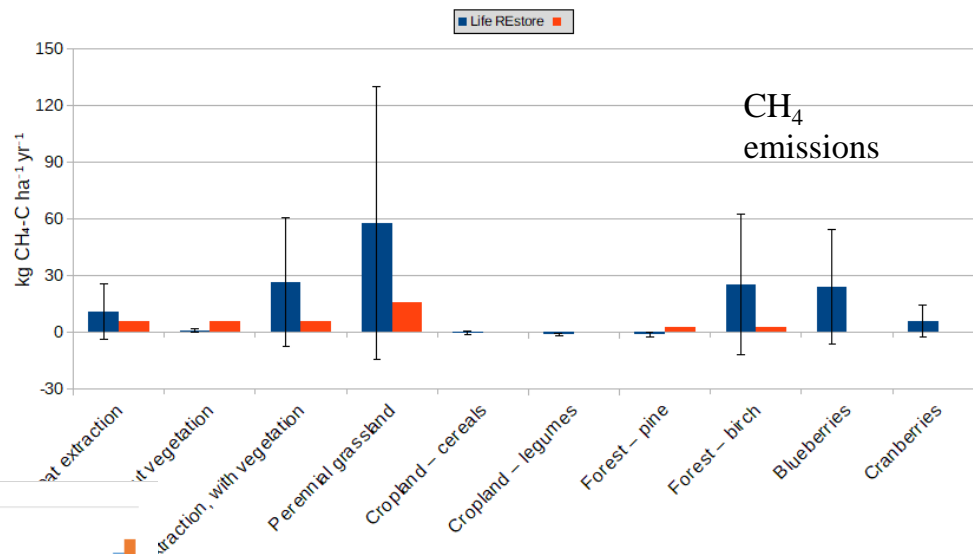
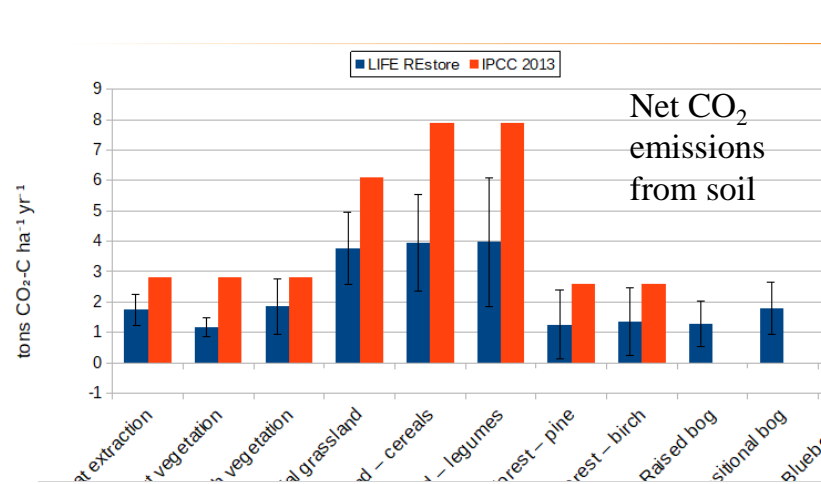


Figure 2. Depth to water example

Maps are available as
WMS service here:
<https://silava.forestry.gov.lv/geoserver/silava/wms>

GHG inventory improvements— experience from LIFE Restore (LIFE14 CCM/LV/001103) project in Latvia



GHG inventory submission 2021

(country specific GHG EFs for wetland category based on LIFE Restore study results).

Lazdiņš A., Lupiķis A. 2019. LIFE REstore project contribution to the greenhouse gas emission accounts in Latvia. In: A. Priede, A. Gancone (Eds.), Sustainable and responsible after-use of peat extraction areas (pp. 21–52). Baltijas Krasti.

Demonstration of GHG mitigation measures

Demonstration sites: 10 sites in forest land, 7 in agriculture land



Outcome – knowledge on how to implement climate change mitigation (CCM) measures and what are awaited effects.
Catalogue of CCM measures: GHG mitigation potential, socio-economic impact evaluation and instructions on how to adapt CCM measures for implementation in other countries in temperate climate zone.

Demonstration of GHG mitigation measures

Demonstration sites: variety of CCM measures incl.:

- In forest land - 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.



Policy uptake

Simulation tools and proposals for inclusion of CCM measures:

✓ **Simulation tool**

Web based tool - simulation of potential impacts (GHG mitigation and socio-economic) of CCM measures for better policy planning. Evaluation and projections, farm level as well as country level simulations.

Quantitative assessment of different CCM measures in organic soil management, - instead of currently used qualitative approximations.

Current results: farm level modelling tool – to be used for country level Simulation tool` input data gathering.



Thank you!

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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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