LIFE OrgBalt project and work on GHG mitigation measures and policy instruments

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

LIFE18 CCM/LV/001158

Research seminar on policy instruments guiding towards sustainable use of peatlands in agriculture, 24-25 September 2019, Helsinki (Finland)

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Project “roots”

LIFE REstore project results indicated importance and necessity to continue work on elaboration of GHG inventory data:

- Actual GHG emissions from the most of the land use categories are about twice less than the emission estimates according to IPCC Wetlands Supplement

- Next step is elaboration of GHG emission factors for nutrient-rich organic soils (**LIFE OrgBalt project**)

Without scientifically sound knowledge on the real emission amount policy planners (at all levels) are not supported with the necessary information and policy decisions may not be properly targeted.

Who is involved?

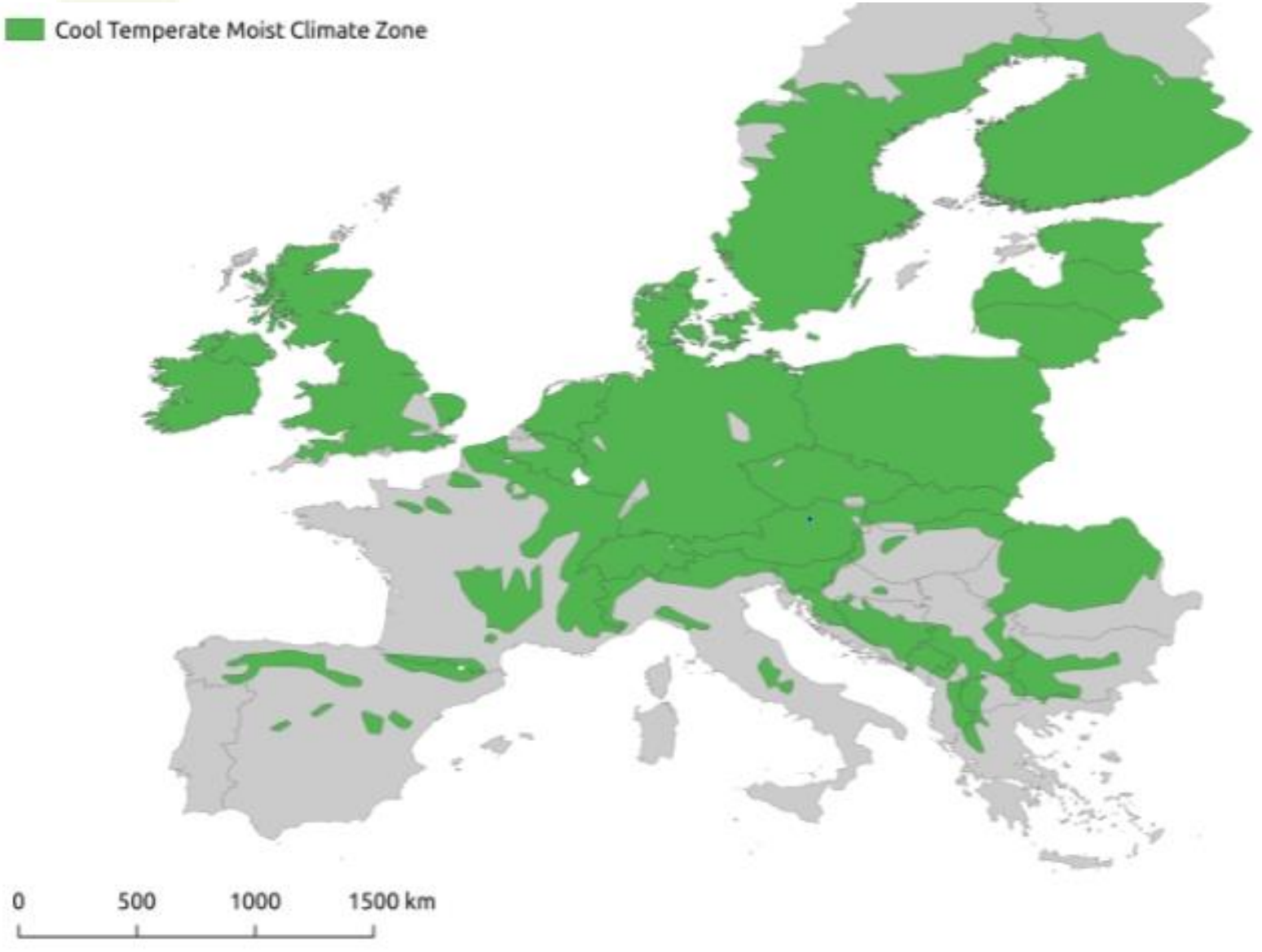
8 Partners:

Latvia:	LSFRI Silava
	LLU
	MA
	BalticCoasts
Lithuania:	LRCAF
Estonia:	UT
Finland:	LUKE
Germany:	MCF

5 Countries

Start: 01/08/19 - End: 31/08/23

What is the target territory?



Main idea and objectives

Idea: GHG inventory improvements and innovative Climate Change Mitigation (CCM) measures in nutrient-rich organic soils in Temperate Cool & Moist (TCM) climate region to reduce GHG emissions from cropland, grassland and forest land

Objectives:

- ✓ Improvement of GHG inventory methods and activity data for nutrient-rich organic soils
- ✓ Identifying and demonstration of cost-effective CCM measures applicable in nutrient-rich organic soils
- ✓ Elaboration of tools and guidance for implementation of CCM measures and verification of the impact on CCM policies

Main activities and outcomes

Implementation Actions

C1 – <u>Elaboration of GHG EFs</u> and activity data and evaluation of the impact of CCM measures for nutrient-rich organic soils

GHG fluxes and other measurements (plant biomass production, soil microbial diversity, testing of infrared spectroscopy method for characterization of peat properties, evaluation of soil properties) in 30 sampling sites (reference sites) mainly in Baltic States, but also in Finland and 12 demo sites.

Outcome: Elaborated EFs that are applicable in all partner countries and more widely within the temperate climate region.

Main activities and outcomes

C1 – elaboration of GHG EFs and activity data and evaluation of the impact of CCM measures for nutrient-rich organic soils

Work on geospatially explicit activity data of drained nutrient-rich organic soils by developing algorithm for connection of drainage ditches without spatial information on culverts.

Infrared spectroscopy analysis of peat and evaluation of water regime using LiDAR data.

Outcome: Improved methodologies for GHG inventory reporting and related national reports.

Main activities and outcomes

C1 – elaboration of nutrient-rich organic soils GHG EFs and activity data and <u>evaluation of the impact of CCM measures</u>

Catalogue of CCM measures including socio-economic impact assessment, elaborated EFs and activity data. The catalogue will be linked with the GHG modelling tool (C5) and will contain instructions for application of CCM measures in the partner countries and guidelines for adaptation of the applied methods in temperate region.

Outcome: Catalogue of CCM measures

Main activities and outcomes

C2 –Tools for modelling of impact of climate change on GHG emissions, integration of GHG EFs and CC scenarios.

Merging national CC scenarios (BS, Finland) with GHG emission factors and activity data to evaluate long-term efficiency of the proposed CCM measures (nutrient-rich and nutrient-poor sites (LIFE Restore results and other projects` data))

Outcome: Integration of climate change scenarios and projections of GHG emissions from organic soils

Main activities and outcomes

C2 – Tools for modelling of impact of climate change on GHG emissions, elaboration of the tools for GHG projections.

Elaboration of equations for the CC scenario analysis and elaboration of the set of organic soils related activity data for different CC and management scenarios. Adaptation of SUSI peatland simulator (LUKE) for projections of GHG emissions from organic soils in Baltic States to compare the impact of different management options under varying climate conditions.

Outcome: New mathematical equations and tools (spreadsheets and R scripts) for projections of GHG emissions from organic soils

Main activities and outcomes

C2 – Tools for modelling of impact of climate change on GHG emissions, socio-economic analysis

Elaborate methodology for socio-economic impact assessment of the measures proposed in the catalogue of CCM measures (C1), including a set of tools and methods for selection of appropriate measures. Evaluation of the social, environmental, economic, and technological implications of each of the specific proposed measures

Outcome: Methodology for socio-economic analysis of the proposed measures

Main activities and outcomes

C3 – Implementation of CCM measures in selected demo sites in Latvia

Demo sites/demonstration areas (long term monitoring plots) in Latvia on nutrient-rich organic soils in forest land, cropland, grassland. Establishment of dissemination facilities in the demo sites for training and education of the target groups.

The demo sites will be used for monitoring of impact of implementation of Project actions. 4 demo sites in cropland, 3 in grassland and 4 in forest land.

Outcome: Selected CCM measures implemented in the demo sites

Main activities and outcomes

Short intro to selected **measures to be implemented in demo sites:** with transferability potential according to literature reviews:

- Agriculture scenarios: legumes in crop rotation, conversion of cropland (cereal) to grassland (seeds and fodder), agroforestry - fast growing trees/grass (seeds/biofuel), controlled drainage systems in grassland
- Forestry scenarios: afforestation considering shorter rotation, wood ash after commercial thinning in spruce stands, specific forest regeneration methods - in spruce stands to reduce GHG emissions from soil and in clear-felling sites with birch and grey alder
- Paludiculture scenarios: fast growing species and alder in riparian buffer zones, afforestation of grassland with alders

Main activities and outcomes

C4 – Support to authorities in implementation of CCM measures in the national and regional <u>strategies and action plans</u>

CAP and CCM action plans (LULUCF action plan) are selected as catalysts of the process of integration of the Project results in the policy planning. Integration will be supported by the direct involvement of the responsible authorities (e.g. Ministry of Agriculture of Latvia) in the implementation of respective Project Actions.

Outcome: The Project will provide quantitative assessment of CCM effect and proposals/recommendations on inclusion of the CCM measures in policy planning documents.

Main activities and outcomes

C5 – Policy planning tool for decision support on implementation of CCM measures

Policy planning tool - Simulation model for a single holding and regional level projections of GHG emissions and socio-economic impact assessment of implementation of CCM measures (by using CCM catalogue, elaborated activity data, EFs and socio-economic estimates. Simulation model will be transferred to web platform and merged with soil and terrain map layer so that it can be accessed and used by any farmer or forester.

Real life testing by organizing end users targeted training sessions and preparing explanatory materials for advisory organizations e.g. Rural Advisory and Training Centers.

Main activities and outcomes

Networking

The scientific competences and policies needed for implementation of the Project results outside the participating countries will be discussed in details in the **Joint Baltic, German and Finnish CCM Action Programme** that foresees actions and procedures for collaborative implementation of the Project results within and outside the Project region.

Wish us good luck!

Kiitos!