

REPORT

ON IMPLEMENTATION OF THE PROJECT

DEMONSTRATION OF CLIMATE CHANGE MITIGATION MEASURES IN NUTRIENTS RICH DRAINED ORGANIC SOILS IN BALTIC STATES AND FINLAND

WORK PACKAGE

STRATEGIES AND ACTION PLANS

(C.4)

ACTIONS

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Project results in Rural Development Plan**

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SUMMARY

In the scope of the LIFE OrgBalt, LIFE18 CCM/LV/001158 "Demonstration of climate change mitigation potential of nutrient rich organic soils in Baltic States and Finland" (Project) the support tool - a macroeconomic model for public-private cooperation (PPC model) for the socio-economic evaluation for the assessment of the costs and impacts of Project climate change mitigation measures is developed.

This activity is of special importance as a demonstration of the approach, which is proposed for implementation in the Rural Development Program for efficient usage of available support of the next Programming Period of Structural funds of EU.

The report provides: 1) functional PPC model in MS Excel environment (Annex 1 of the report) 2) description of PPC model guiding principles, methodology and process of development of the model and current stage of the development (Annex 2 of the report) 3) User manual for the model "Functional land management model - a tool for climate change mitigation and sustainable management" to supplement sustainable and progressive uptake of the model usage (Annex 3 of the report) and 4) Proposals for the adoption of the project results in Rural Development Plan (Annex 4 of the report)

The proposals for the adoption of the project results in Rural Development Plan (Annex 4) includes analyses of the current Rural Development programme in the Project partner countries with the focus on Latvian case. It assesses 17 organic soil management scenarios planned in Latvia and Finland in the light of the Rural Development programme support available. Proposal provides recommendations for the extension and modification of the current support measures to target the sustainable organic soil management and recommendations for improved co-operation of the involved institutions.

At current stage the PPC model structure is completed, and parameters are included and first 3 scenarios fully integrated in the model. The inclusion of this first data is important to evaluate how to improve and adapt the model structure. This will allow a smooth and correct integration of data for the remaining climate scenarios during the whole project. To ensure a qualitative and comprehensive integration of all data, the remaining scenarios (14) will be added throughout the whole project to integrate the model with updated data when all data on GHG emissions will be available. Data collection for all scenarios is therefore in progress and furthermore detailed report will be completed after adding the remaining scenarios.

ABBREVIATIONS

PPC	- public-private cooperation
CCM	- climate change measures
RDP	- Rural Development Program
MS Excel	- Microsoft Excel
LIFE OrgBalt	- LIFE OrgBalt, LIFE18 CCM/LV/001158 “Demonstration of climate change mitigation potential of nutrient rich organic soils in Baltic States and Finland” project
GHG	- greenhouse gas emissions
CO ₂	- carbon dioxide



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The model is a microeconomic model, to be used at farm level as business planning tool. At the same time, it will also generate optimal public funding amount.

Current results

- The model structure was completed and parameters are included. See annex 1 "PPC MS Excel model".
- The following three scenarios have been fully integrated in the MS Excel model:
 - (LIFE Restore) Rewetting and cultivation of fruit trees and berries, including blueberries and cranberries.
 - (LVC301) Conversion of cropland used for cereal production into grassland considering periodic ploughing.
 - (LVC305) Controlled drainage of grassland considering even groundwater level during the whole vegetation period.
- The inclusion of this first data is important to evaluate how to improve and adapt the model structure. This will allow a smooth and correct integration of data for the remaining climate scenarios during the whole project. In order to ensure a qualitative and comprehensive integration of all data, the remaining scenarios (14) will be added throughout the whole project to integrate the model with updated data when all data on GHG emissions will be available. Data collection for all scenarios is therefore in progress.
- Guidelines have been developed for final users. See annex 2 and 3 "PPC model guidelines" .
- A first proposals for the adoption of the Project results in the Rural Development Plan has been drafted. See annex 4 "Proposals for the adoption of the Project results in the Rural Development Plan".

Main objectives

- To develop a support model for the assessment of the costs and impact on GHG emissions and CO₂ sequestration, of the climate change mitigation measures implemented under the LIFE OrgBalt project.
- To provide a tool to landowners / managers to work with their specific plot of land, to understand how much the implementation of the chosen measure will cost, what the required loan amount is, and what will be their return on investment and necessary amount of public investments.

Primary target audience:

- Landowners / managers, rural support services, farmers' and foresters' associations.

Model guiding principles:

The model is designed to allow the user to assess the performance of organic soils depending on the planned land use type (scenario), based on land use performance criteria:

- Financial return of organic soil use scenarios from the implementation of climate change mitigation measures;
- Economic returns of organic soil use scenarios (based on GHG emission reductions and other factors such as employment);
- Financial deficit and the optimal amount of public funding for land use scenarios that give a positive economic return, but the implementation of which is not economically profitable for businesses;
- Reduction of GHG emissions, incl. CO₂ sequestration indicators.

Methodology

The model calculates the benefits of land use scenarios for the following six different periods: 5 years, 10 years, 25 years, 50 years, 100 years, 200 years, according to a defined set of indicators. The model can be flexibly implemented in all partner countries by changing data entry parameters.

Format

The PPC model is developed using MS Excel (with a user-friendly interface)

Description of the main activities since the beginning of the project

- **Conducted analysis:** at first a needs analysis was conducted. Investigation of existing methodologies, data identification and definition has been done for the development of the public and private sector cooperation model to adopt the Project results in relevant policy documents. The following focus points were identified:
 - Lack of traditional investment and high risk for private owners

- Stakeholders will not be encouraged to adopt CCM practices if the proposed trade-offs have a negative impact on farm or forest productivity
- Private-public partnership financial initiatives will encourage farmers and forest owners to implement measures that have high initial implementation or maintenance costs.

Further analysis was conducted to identify existing methodologies and data, constrains that could discourage stakeholders from adopting climate change mitigation practices and tangible benefits and improvement in productivity that the adoption of CCM practices could bring

- **Identification and definition of the data to be included in the model:** the data to be included in the model were identified and defined [parameters to be assessed for each land plot (agricultural land, forest land, wetland); investment costs needed to prepare the rural land use activities planned; maintenance and production costs that are relevant to the scenarios related to economic activities (eg forestry, berry growing); expected financial and economic benefits - determining both potential productivity, revenue and GHG emission reductions; potentially available and received support for the existing type of land management (area payments, subsidies); other socio-economic and / or environmental benefits (employment, etc.)].
- **Improvement requests:** several internal meetings took place as well as meeting with partners to discuss the model contents and development. Further analysis was requested by partners in order to provide a tool that could be used at farm level (the model output should be targeted to be useful for landowners, the interface should be user-friendly).
- **Model format analysis:** a format analysis was requested. The format of the PPC model was discussed [MS Excel vs Web database Rstudio]. The advantages and disadvantages of the two proposed formats (interface, users’ pros and cons, model administrators’ pros and cons, model management after the project, privacy policy and data storage) were analysed, presented and discussed during internal and partners meetings. It was decided that MS Excel format will be used in the development of PPC model given the less required efforts from a data management / administrative perspective. Budget restrictions were also considered. Nevertheless, the data included in the MS Excel could be transferred on a web-based application if needed. This

opportunity can be therefore considered by partners in a second phase, within the framework of other projects.

- **Possible overlap risks between activity C4 and activity C5:** meetings took place between Baltic Coasts, SILAVA and LLU (responsible partner for the development of activity C5 “Elaboration of a simulation model for a single field and regional level projections of GHG emissions and socio-economic outputs”) to avoid overlaps in the scope and contents of the two models.
- **Integration potential between the PPC model (C4) and the Simulation tool model (C5):** integration potentials of the two models were discussed. The integration is technically possible, but it should be postponed and discussed within the framework of other projects requiring extra implementation and follow up resources (a conversion of the PPC MS Excel model to the Rstudio web-based application, on which the simulation tool will be built, is indeed required).
- **Development of proposals for the adoption of the Project results in relevant policy documents:** recommendations for the integration of the model results into relevant policy documents have been development. The analysis includes proposals on potential existing support from the Rural Development Program to finance the identified mitigation measures. A more theoretical general framework have been developed at this phase since the contents of the next RDP are not known yet. A draft structure of the planned analysis has been sent to all partners and information were collected (questions and instructions on the sections to be filled in were provided). Further proposals will be made in synergy with the Ministry of Agriculture which is responsible for Activity C4 – task 1 – “Development of supplements for national climate strategies and action plans”, and integrated in the current analysis when data on the new RDP plan will be available and all scenarios will be integrated in the model.

The model in a nutshell

The model consists of three main pages: “data entry”, “results”, “help” (guidelines are available under this section). The model can be used at:

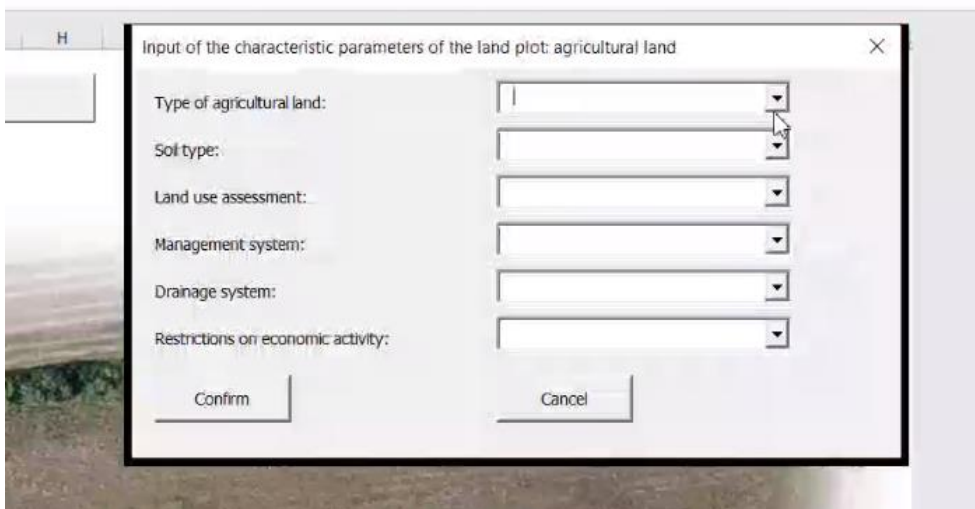
- “user level” by users who wish to enter data to test their land type financial and economic returns basing on the provided scenarios. No password is needed in this case.
- “operator level” by users interested in modifying the data and assumptions of the model to fit specific characteristics (for example country specific



values). In this case a password is needed and will be provided to all project partners and to all interested users.

Data can be entered at two levels:

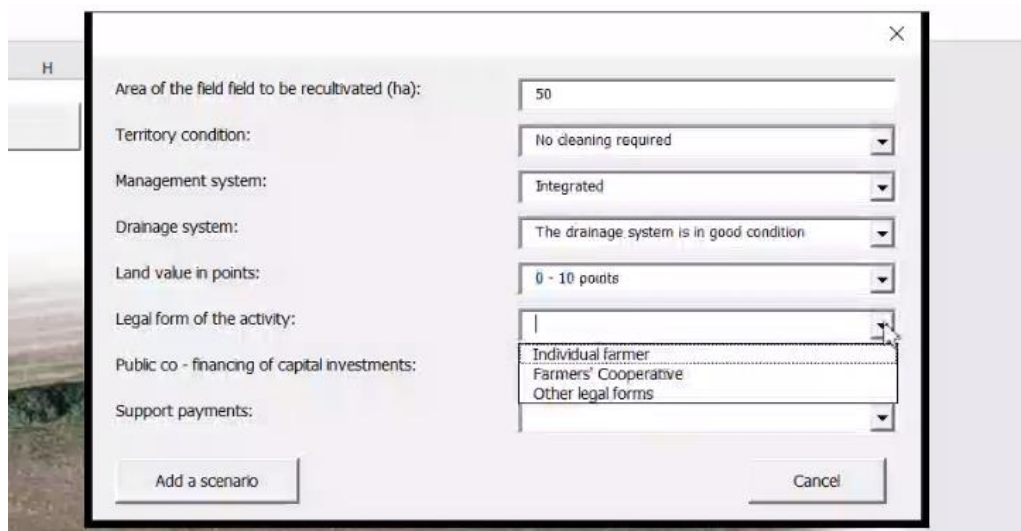
1. Restricted criteria: these data include the selection of the type of land plot and the selection of the appropriate scenarios by entering values of limiting parameters. Limit values for all scenarios analysed have been entered and are available in the guidelines (accessible through the “verification of limit value” bottom) – See Figure 1



2. Additional criteria: additional data can be entered to provide more results – See Figure 2

Figure 1 – Restricted criteria

Figure 2 – Additional criteria



Summary of the main meetings

- 01/07/2020 – Latvian National Workshop – If needed the presentation is available.
- 12/11/2020 – 1st model presentation meeting with all partners. If needed presentation and minutes are available.
- 14/12/2020 - Model contents discussion meeting with all partners. Discussion on data availability and on possible overlaps between C4 and C5. If needed presentation and minutes are available.
- 01/02/2021 - Model contents discussion meeting with all partners. Discussion of the model format and of a possible integration between C4 and C5. If needed presentation and minutes are available.
- 20/02/2021 – Steering Group meeting – Presentation of the model. If needed the presentation is available.

Future activities

- The remaining 14 scenarios will be fully integrated by the end of the project
- Further meetings will be organized with partners to present the model development and discuss potential further improvements
- Support will be provided to users

Annexes

Annex 1 "PPC MS Excel model"

Annex 2 "PPC model guidelines" – English language

Annex 3 "PPC model guidelines" - Latvian language

Annex 4 "Proposal for the adoption of the Project results in Rural Development Plan"
– English language



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