



# Economic analysis of climate change mitigation costs and benefits – a PPC model approach

Training Workshop

Online for stakeholders in Lithuania, 17.04.2024.

Baltic Coasts

Imants Krūze

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”



## Content of the PPC model

- 17 scenarios of climate change mitigation (CCM) measures (demonstration sites):
  - 13 in Latvia
  - 3 in Finland
  - 1 Restore site in Latvia
- Each scenario with different conditions and planned measures (land use type, drainage system functioning or not, main species)

## LIFE OrgBalt CCM measure scenarios (1/2)

CONVERSION OF CROPLAND TO GRASSLAND (LVC301)

INTRODUCTION OF LEGUMES IN CROP ROTATION (LVC304)

CONVENTIONAL AFFORESTATION (SPRUCE) (LVC302)

CONTROLLED DRAINAGE OF GRASSLAND (LVC305)

AGROFORESTRY – FAST GROWING TREES AND GRASS (LVC306)

FAST GROWING SPECIES IN RIPARIAN BUFFER ZONES (LVC310)

PALUDICULTURE – AFFORESTATION OF GRASSLAND WITH BLACK ALDER AND BIRCH (LVC303)

APPLICATION OF WOOD ASH IN SPRUCE STAND (LVC307)

CONTINUOUS FOREST COVER AS A FOREST REGENERATION METHOD IN SPRUCE STAND  
(LVC308)

## LIFE OrgBalt CCM measure scenarios (2/2)

SEMI-NATURAL REGENERATION WITH BLACK ALDER WITHOUT RECONSTRUCTION OF DRAINAGE SYSTEMS (LVC309)

RIPARIAN BUFFER ZONE IN FOREST LAND PLANTED WITH BLACK ALDER (LVC311)

FOREST REGENERATION (CONIFEROUS TREES) WITHOUT RECONSTRUCTION OF DRAINAGE SYSTEMS (LVC312)

STRIP HARVESTING IN PINE STAND (LVC313)

CONTINUOUS COVER FORESTRY IN DRAINED, NUTRIENT RICH PEATLAND SPRUCE FOREST (FIC101)

SHIFTING TO CONTINUOUS COVER FORESTRY IN A DRAINED NUTRIENT RICH PEATLAND SITE (FIC102)

SHIFTING TO CONTINUOUS COVER FORESTRY ON DRAINED, NUTRIENT RICH PEATLAND (FIC103)

## Aim of the PPC model 1/2

Assess the costs and impact on GHG emissions and CO<sub>2</sub> sequestration of the CCM measures implemented within the LIFE OrgBalt project.

It is a microeconomic model to be used for:

- Business planning on a farm level;
- Guidance on optimal public funding amount

The main goal is to provide a tool to landowners/managers to help understand:

- Implementation costs of the chosen measures
- Required loan amount
- Period for reaching return of investment
- Necessary amount of public investments

## Aim of the PPC model 2/2

### Analysis of needs

- 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

### Primary target audience

- Landowners
- Rural support services
- Farmers' and/or foresters' associations

## PPC 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 CCM 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. CO<sub>2</sub> sequestration indicators.

## PPC model methodology and format

### Methodology

The model uses defined set of indicators to calculate benefits of land use scenarios for the following six different periods: 5 years, 10 years, 25 years, 50 years, 100 years, 200 years.

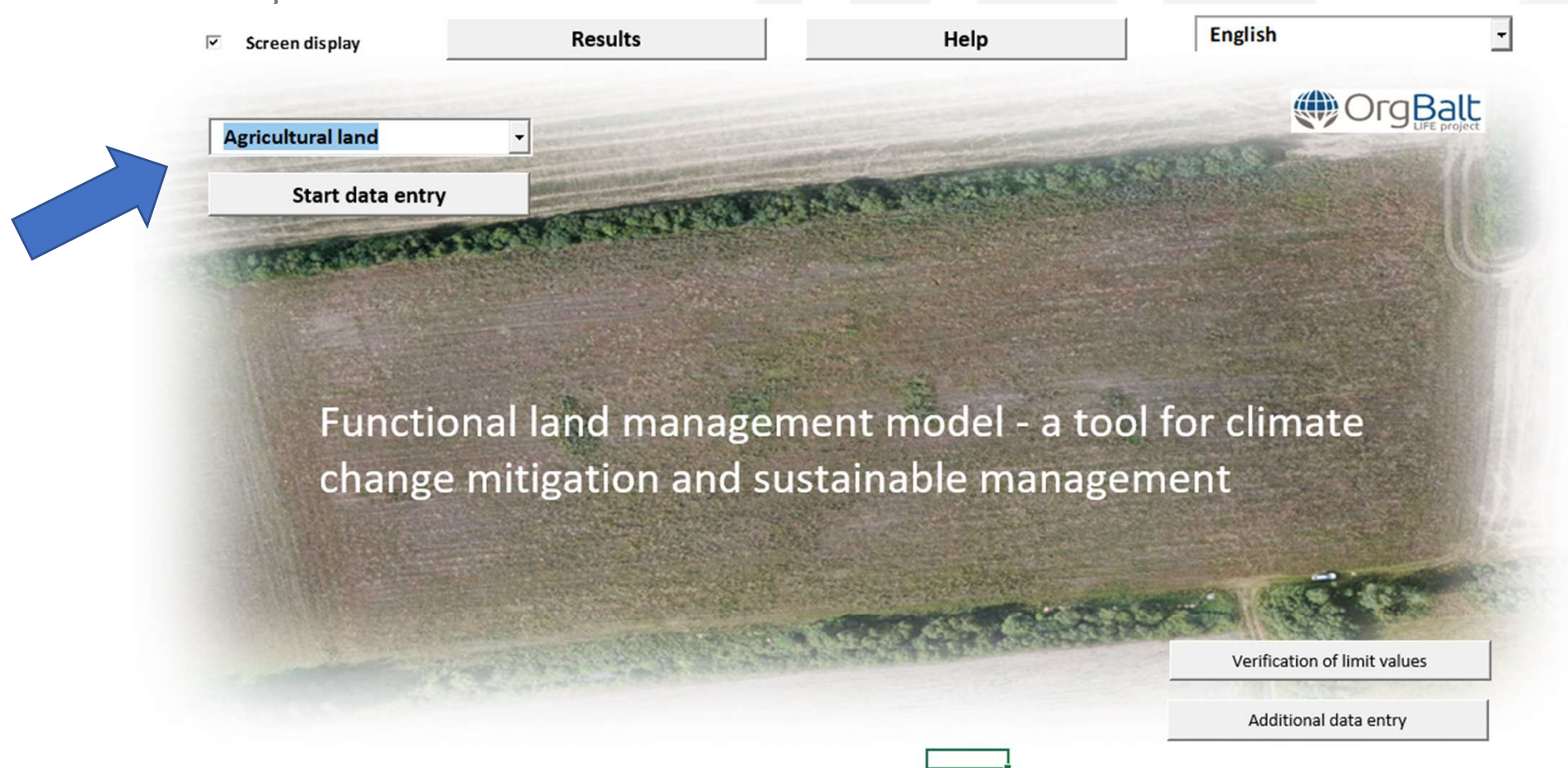
### Format

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



## The PPC model in practice

Users can choose the type of land (e.g. agricultural land, forest land) and then will be asked to enter a series of relevant data. The model will return economic and financial data to evaluate the return on investment and the potential GHG reduction of the selected scenario.

A screenshot of the PPC model web interface. The background is an aerial photograph of a rural landscape with fields and a line of trees. The interface includes a top navigation bar with a checked "Screen display" option, "Results" and "Help" buttons, and a language dropdown set to "English". Below this is a dropdown menu currently showing "Agricultural land", with a blue arrow pointing to it from the left. Below the dropdown is a "Start data entry" button. In the bottom right corner, there are two more buttons: "Verification of limit values" and "Additional data entry". The OrgBalt LIFE project logo is in the top right corner. A small green rectangular box is visible at the bottom center of the interface.

☒ Screen display   Results   Help   English

Agricultural land   Start data entry

Functional land management model - a tool for climate change mitigation and sustainable management

Verification of limit values   Additional data entry

Before you start working with the model, please read the information provided in the "Help" section.

# 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](http://www.orgbalt.eu)

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