



# User Guide for TUdi's Socio-economic Soil restoring digital Supporting Toolkit (SEST)

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# 1. SEST framework

The SEST contains two-level users structure—*farm level* and *policy and stakeholder level*.

**SEST Farm level** contains three modules.

**Management Operational Tool (MOT)** calculated the gross margin for each crop per hectare for base and alternative soil restoration strategies. Also, it calculates the break-even point – the point in which the income covers the cost, and the profit is zero. The break-even point could be calculated for each of the base and alternative soil restoration strategies.

**Cost-Benefit Analysis Tool (CBAT)** calculates the partial budget and provides the ability to perform a comparative analysis of the changes in revenues and costs using the baseline and alternative soil restoration strategies. A dynamic cost-benefit analysis can also be carried out to evaluate the return on investment for each alternative soil restoration strategy.

**Simulation Environmental Tool (SET)** optimizes profit, break-even point and profitability to improve medium- and long-term results based on changes in average yields and crop prices. It is used sensitivity analysis for calculations. In addition, partial life cycle analysis based on information provided by **FaST** tool is available.

**SEST Policy and stakeholders' level** will ensure analysis of average farm characteristics such as income, variable and fixed costs for different agriculture system – cereals, tree and pastures.

## 2. Access to the Platform

### 2.1 Farmer Registration

Farmers need to register before accessing the SEST platform:

1. The farmer submits a registration request to the **SEST administrator** using a dedicated registration form.
2. The administrator enters the details into the **Farm Data** section of the system.
3. The system then saves a user–farm configuration under **Farm Representatives**. Once the request is approved, the farmer can log in and start working with the platform.

The **home (desktop)** screen provides access to the main functions of the system. It is divided into two main areas:

### 2.2 Left panel – Data entry steps

The steps guide the user through the process of entering farm-level data:

- **Step 1: Data entry** – Enter basic data for **Location**, **Income**, and **Cost**. These inputs are used in drop-down lists throughout the system.
- **Step 2: Data for base soil restoration strategy** – Provide information about income and variable costs (VC) for the current soil restoration strategy. A separate version must be created for each crop.
- **Step 3: Data for alternative soil restoration strategy** – Enter income and variable costs (VC) for an alternative soil restoration strategy. Separate versions can be created for different scenarios.
- **Step 4: Enter data for Fixed Costs and Investments** – Provide fixed costs (which remain unchanged regardless of yield) and investment data.

## 2.3 Right panel – SEST Modules

The right side lists the available **SEST Modules**, grouped into three main elements:

- **MOT Module** – Gross Margin, Break Even Point
- **CBAT Module** – Partial Budget, Dynamic Cost-Benefit Analysis
- **SET Module** – Profit Optimization, Gross Margin Optimization, Profitability Optimization, Life-cycle Analysis

These modules use the input data to perform calculations and generate reports for decision-making and strategy evaluation.

The screenshot shows the TUDI Socio-economic soil restoring digital supporting toolkit interface. The top navigation bar includes 'Desktop', 'Data', and 'Output review' tabs. The left sidebar contains icons for home, cube, and document. The main content area is split into two panels. The left panel, 'Income and cost structure under different soil restoration strategies (SRS)', has four steps: Step 1: Data entry (Location, Income, Cost), Step 2: Data for base soil restoration strategy (Base income and VC), Step 3: Data for alternative soil restoration strategy (Alternative income and VC), and Step 4: Enter data for Fixed Costs and Investments. The right panel, 'SEST Modules', contains three sections: MOT Module (Gross Margin, Break Even Point), CBAT Module (Partial Budget, Dynamic Cost-Benefit Analysis), and SET Module (Profit Optimization, Gross Margin Optimization, Profitability Optimization, Life-cycle analysis).

The **Data** screen provides access to all basic parameters and farm-level information required for calculations and analysis. The available categories are organized into two sections:

## 2.4 General Data

This section includes key system-wide parameters that influence farm and policy calculations:

- **Countries**
- **Currency rates**
- **Soil recovery strategy**
- **Land cultivation type**
- **Irrigation type**
- **Humidity**
- **PC Method**
- **Location**

- Fuel type
- Seasons
- Temperature norm
- Irrigation method
- Soil classification
- Measurement units
- Additional parameters
- Investment types
- Climate zones
- Climate
- Soil type

### 2.4.1 Data Entry – Humidity

This screen illustrates how to enter **Humidity data**, which is part of **Step 1: Data entry** in the Income and Cost Structure process.

The table contains the following columns:

- **Humidity Code** – a numeric identifier for the entry.
- **Humidity Name (BG/EN/DE/ES)** – the description of the humidity level in multiple languages (e.g., *Dry, Moist*).

**How to add a new record:**

1. Click **Add row**.
2. Enter the code and the corresponding humidity names.
3. Confirm with **Save**, then close the window with **Close**.

This method of data entry is the same for all parameters in **Step 1 (Location, Income, Cost, Humidity, etc.)**, ensuring consistency across the system.

The screenshot shows the 'Humidity' data entry window in the TUDI toolkit. The window has a title bar with 'TUDI Socio-economic soil restoring digital supporting toolkit' and navigation icons for Desktop, Data, and Output review. Below the title bar is a search bar and a table with columns: Humidity Code, Humidity Name (bg), Humidity Name (en), Humidity Name (de), Humidity Name (es), and Humidity Name (fr). The table contains two rows: 01 (Dry) and 02 (Moist). The interface also includes a 'Delete' button, an 'Add row' button, a 'Close' button, and a 'Save' button. A bottom navigation bar shows icons for Home, Data, and Output review.

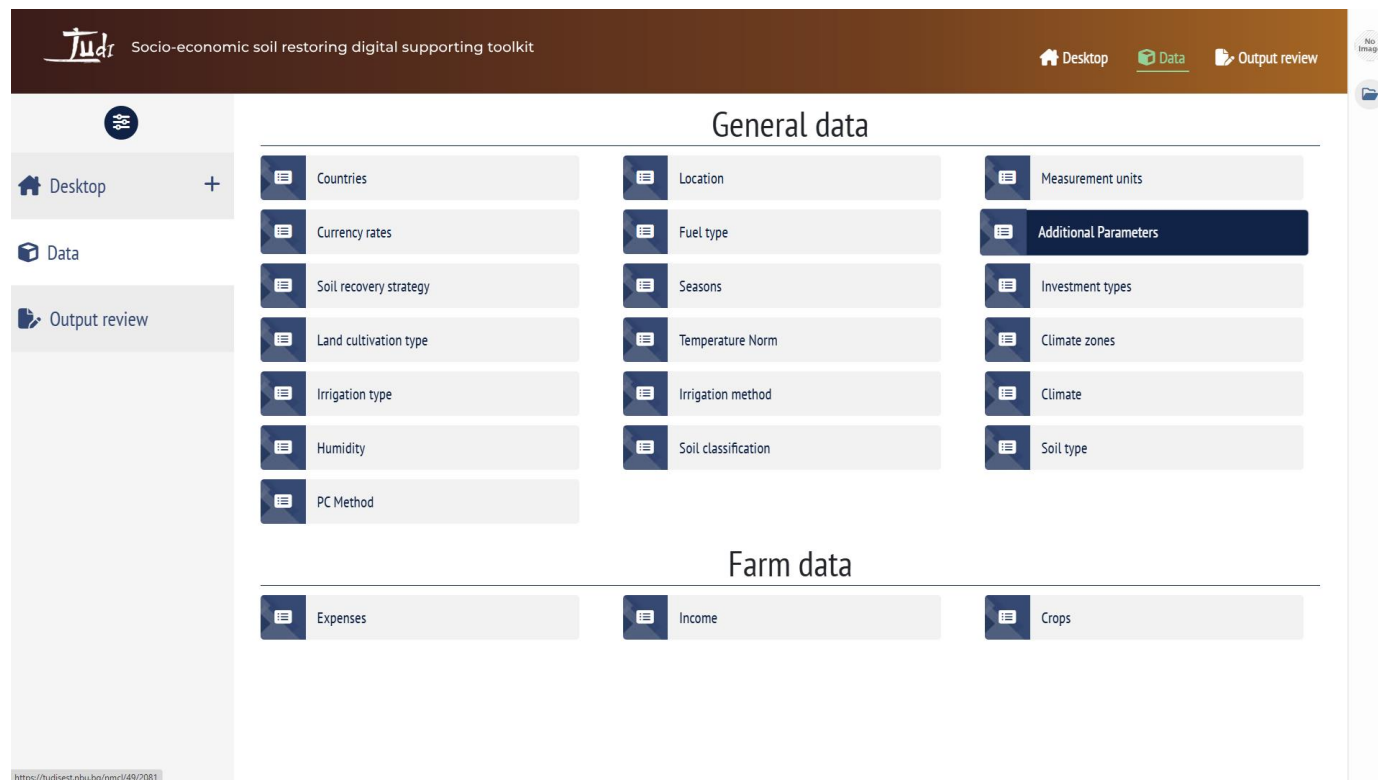
Humidity Code	Humidity Name (bg)	Humidity Name (en)	Humidity Name (de)	Humidity Name (es)	Humidity Name (fr)
01	Сух	Dry	Dry	Dry	Dry
02	Влажен	Moist	Moist	Moist	Moist

## 2.5 Farm Data

This section contains farm-specific information used in calculations:

- **Expenses**
- **Income**
- **Crops**

All entered data is later used in modules and reports across the system.



## 3.Step 1: Data Entry

This is the **first step** in the process of preparing information for reports and analyses. Users need to fill in the basic farm-level data, which will later be used across the system in drop-down lists and modules.

The following data categories are available:

- **Location** – enter the geographical location of the farm.
- **Income** – record all income items (main product, by-product, subsidies, etc.).
- **Cost** – record farm costs, divided into fixed and variable costs.

Entering these details ensures that all subsequent calculations and reports are based on accurate and complete farm data.

### Step 1: Data entry

Fill in data into forms. This information will be used in drop-down lists in the system



Location



Income



Cost

## 3.1 Data Entry – Location

The **Location screen** is part of **Step 1: Data entry**. It allows users to define the farm's geographical location, which will later appear in drop-down lists throughout the system.

The table includes the following columns:

- **Location name (BG/EN/DE/ES/IT/CS/HU)** – location names provided in multiple languages.
- **Country** – the country associated with the location (e.g., *Bulgaria*).

**How to add a new record:**

1. Click **Add row**.
2. Enter the location name in the available language fields and specify the country.
3. Save the record with **Save** and close the window with **Close**.

Accurate entry of locations ensures consistency and standardization across all modules, making it easier to generate correct reports.

## 3.2 Data Entry – Income Screen

The **Income screen** allows users to manage income categories such as **By-product**, **Main product**, and **Subsidy**. Each entry is displayed in a table with columns for code, and income names in different languages.

To add a new entry:

1. Click **Add row**.
2. Fill in the required fields (e.g., code, name of the income item).
3. Save the new record by clicking **Save**, then close the window with **Close**.

This process ensures that the information is correctly stored and becomes available in all linked documents and reports.

Code	Income name [bg]	Income Name [en]	Income name [de]	Income name [es]
03	Основен продукт - Зърно	Main product - Grain	Hauptprodukt - Getreide	Producto principal - Grano
04	Основен продукт - Семе	Main product - Seed	Hauptprodukt - Samen	Producto principal - Semilla
06	Основен продукт	Main Product	Hauptprodukt	Producto principal
07	Основен продукт - Плод	Main product - Fruit	Hauptprodukt - Obst	Producto principal - Fruta
08	Основен продукт			
09				

### 3.3 Data Entry – Expenses

The **Expenses screen** is part of **Step 1: Data entry** and allows users to record different types of farm expenses. Expenses are divided into two categories:

- **Fixed Costs** – costs that remain unchanged regardless of production volume (e.g., labor, land lease).
- **Variable Costs** – costs that vary depending on production levels.

The table includes the following columns:

- **Cost Code (FAST)** – numeric identifier for each expense item.
- **Cost name (BG/EN/DE/ES)** – description of the expense in multiple languages (e.g., *Labor costs, Amortizations, Land lease, Accounting services*).

**How to add a new record:**

1. Click **Add row**.
2. Enter the code and the expense names.
3. Confirm with **Save**, then close with **Close**.

This ensures all expense data is consistently structured and ready for use in reports and modules.

## 4. Step 2: Data for Base Soil Restoration Strategy

### 4.1 Gross Margin – Data Entry Screen

The **Gross Margin screen** is used to calculate gross margin values for a selected crop and soil recovery strategy. It combines both general farm information and detailed financial data.



## Main Information

At the top of the screen, users enter the following:

- **Date created** – automatically generated when the entry is created.
- **Author** – the system user who creates the entry.
- **Farm / Farm Location Name** – the selected farm.
- **Farming Year** – agricultural year of the calculation.
- **Crop** – the selected crop (mandatory).
- **Soil Recovery Strategy** – chosen restoration method.
- **Version №** – identifier of the version of the record.
- **Base Version** – indicates whether this is the main baseline version.
- **Total area (in ha)** – total cultivated area.
- **Comments** – optional notes.

## Income Information

In this section, the user enters details of farm income:

- Income item
- Primary unit
- Quantity (per hectare)
- Unit price
- Total (per hectare)
- Currency (mandatory)

## Variable Costs Information

Here, the user records expenses:

- Expense item
- Primary unit
- Quantity (per hectare)
- Unit price
- Total (per hectare)
- Currency (mandatory)

## Functions available:

- **Add row** – create a new income or cost entry.
- **Delete row** – remove a record.
- **Save** – confirm the entered data.
- **Close** – exit the screen.

This structured entry form ensures that all income and variable costs (VC) are consistently recorded and ready to be used in gross margin calculations and comparative analyses.

## 5. Step 3: Data for alternative soil restoration strategy

### 5.1 Alternative Gross Margin – Linking to Base Strategy

The **Alternative Gross Margin** screen is used to create and manage alternative soil restoration strategies.

#### Results Table

The table lists the available **Base Gross Margin records** with the following details:

- **Farm** – the farm where the calculation is made.
- **Crop** – the selected crop.
- **Soil Recovery Strategy** – indicates whether the record is a base version or already includes a strategy.
- **Farming Year** – agricultural year of the calculation.
- **Version No** – version identifier for the base entry.

#### Linking Alternative Strategy

To create an **alternative strategy**, it must be linked to an existing **base Gross Margin record**:

1. Select the desired base record by clicking the checkbox in the first column.
2. After selecting, use the option **Create alternative Gross Margin**.
3. The new alternative version will inherit the parameters of the base entry, which can then be adjusted according to the chosen soil restoration strategy.

#### Export Option

All results can also be exported to **Excel (.xlsx)** for further analysis.

This ensures that every alternative scenario is properly connected to a corresponding baseline, enabling reliable comparisons.

	Farm	Crop	Soil Recovery Strategy	Farming Year	Version No
<input type="checkbox"/>	Farm 4	Hay	BASE (without strategy)	2025	1
<input type="checkbox"/>	Farm 4	Hay	BASE (without strategy)	2025	2

[Create alternative Gross Margin](#) | [Export \(.xlsx\)](#) | Page 1 of 1 | View 1 - 2 of 2

## Gross Margin – Alternative Strategy Entry

This screen is designed for **easier creation of alternative strategies**, as it automatically uses the data from the **base strategy** as a foundation. The farmer only needs to **add or adjust the income and expenses that differ** under the chosen alternative soil restoration strategy.

### Main Information

- **Date created** – automatically generated date of record creation.
- **Issuer** – the farm for which the alternative strategy is prepared.
- **Author** – the user entering the data.
- **Farm Location Name** – identifies the farm location.
- **Farming Year** – agricultural year of the record.
- **Crop** – selected crop (required field).
- **Soil Recovery Strategy** – indicates which soil recovery strategy is applied.
- **Version No** and **Base Version** – help to connect this record to its base strategy version.
- **Total area (in ha)** – used for calculation.
- **Comments** – optional notes.

### Income Information

This section shows the **incomes inherited from the base strategy**.

- The farmer **adds only new incomes or modifies existing ones** that change under the alternative strategy.
- Fields include: **Income Type, Primary Unit, Quantity (per ha), Unit Price, Total (per ha), and Currency**.
- The total income is automatically recalculated.

### Variable Costs Information

Similarly, the **costs from the base strategy are pre-loaded**.

- The farmer enters or edits **only the variable costs that differ** for the alternative strategy.
- Each cost row includes: **Expense, Primary Unit, Quantity (per ha), Unit Price, Total (per ha), and Currency**.

Additional rows for income or costs can be created using the **green plus button (+)**.

Gross Margin

Help

Close

Save

Search

Main Information

Data from FAST

Date created

2025-09-21

Author

Krzysztof Kaczmarski

Tissue

Farm 4

Farm Location Name

Demokratska2

Farming Year

2025

Version 1P

Crop

Hay

Base Version

1P

Soil Recovery Strategy

BACE (without strategy)

Total area (in ha)

4.50

Comments

Income Information

Income	Primary unit	Quantity (for ha)	Unit Price	Total (for ha)	Currency
Main product - Hay	pc	320.00	2.50	800.00	EUR
Subsidy	pc	1.00	1892.00	1892.00	EUR
Total sum (rows: 2)				2692.00	

1

Show rows (0)

+

Variable Costs Info

Expense	Primary unit	Quantity (for ha)	Unit Price	Total (for ha)	Currency
Harvest	ha				EUR
Total sum (rows: 1)					

1

Show rows (0)

+

## 6. Step 4: Enter data for Fixed Costs and Investments

In this step, the farmer must complete two types of information that are **essential for calculations and analyses**:

- **Fixed Costs** – These are the farm's costs that do not change with yield variations, calculated per hectare. Examples include salaries, land rent, accounting services, etc.
- **Investments** – This section requires the amount of investment needed for each alternative soil restoration strategy. Providing investment data is mandatory, as a **dynamic cost-benefit analysis cannot be performed without it**.

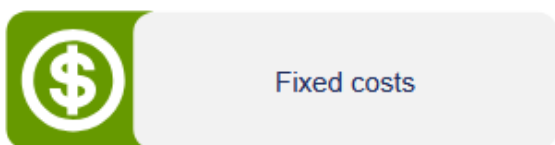
Both sections are accessible via dedicated buttons:

- *Fixed Costs* (dollar sign icon)
- *Investments* (tractor icon)

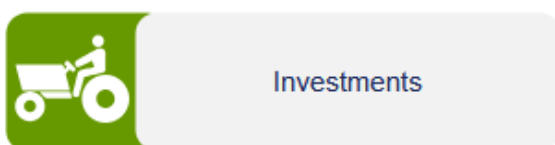
This ensures that all constant and strategic expenses are recorded, enabling accurate evaluation of the financial effects of soil restoration strategies.

#### Step 4: Enter data for Fixed Costs and Investments

You need to provide the farm's fixed cost (the cost which doesn't change if the yield changes) per hectare.



You need provide the amount of the investment needed for each alternative soil restoration strategy. You can't do a dynamic cost-benefit analysis if you don't provide investment data.



## 6.1 Fixed Costs – Data Entry Screen

The **Fixed Costs** screen allows the farmer to record expenses that remain constant regardless of crop yield.

- In the **Main Information** section, details such as *Date created*, *Issuer (farm)*, *Author*, *Farm Location*, and *Farming Year* are shown.
- In the **Fixed costs details** section, the user selects the relevant fixed cost item (e.g., *Labor costs*, *Land lease*, *Accounting services*).
- The farmer must enter the **Price per hectare** and select the appropriate **Currency**.

These costs are essential for building a reliable financial model because they affect profitability calculations but remain unchanged when yields vary.

Once the fixed cost data is entered, click **Save** to confirm.

## 6.2 Investment – Entry Screen

The **Investment Result** screen enables farmers to link investments with previously created **Gross Margin records**.

- In the **list**, both **Base** and **Alternative** Gross Margins are displayed, including details such as *Crop*, *Soil Recovery Strategy*, *Farming Year*, *Version Number*, and *Gross Margin Type*.
- To create an investment entry, the farmer must **select the appropriate Gross Margin** by ticking the checkbox next to the desired record.
- The system requires investments to be connected to a specific Gross Margin version.

At the bottom of the screen, the options **Create Investment** and **Export (.xlsx)** are available.

- *Create Investment* → opens a new investment entry linked to the selected Gross Margin.
- *Export (.xlsx)* → exports the displayed Gross Margin list to Excel for further use.

Fixed Costs

Help

Client

Save

Search

Main information

Date created

2023-09-21

Author

Krzysztof Kucharski

Issue

Farm 4

Farm Location Name

Farm 4

Farming Year

Comments

Fixed costs details

Fixed Costs

✖

Price per (ha)

Currency \*

EUR

Total sum (rows: 1)

Show rows (10)

The **Investments screen** is used to record all investment activities related to a selected crop and soil restoration strategy. This information is essential for conducting **dynamic cost-benefit analysis**.

This functionality ensures that investments are correctly linked to the selected **Gross Margin** and soil restoration strategy, allowing for accurate profitability and sustainability assessments.

Result

Q

Search everywhere

Help

Start report

Choose Gross Margin to create Investment

<div><div></div></div>	Crop	Soil Recovery Strategy	Farming Year	Version No.	Gross Margin Type
<div><div><div><div><div></div><div>Base</div></div></div><div><div><div></div><div>Hay</div></div><div><div></div><div>Hay</div></div></div></div></div>					
<div><div><div><div><div></div><div>Hay</div></div></div></div></div>		BASC (without strategy)	2025	1	Base
<div><div><div><div><div></div><div>Hay</div></div></div></div></div>		BASC (without strategy)	2025	2	Base
<div><div><div><div><div></div><div>Alternative</div></div></div></div></div>					
<div><div><div><div><div></div><div>Hay</div></div></div></div></div>		Soil recovery	2025	1	Alternative

Create Investment

Export (.xlsx)

Page 1

of 1

10

View 1 - 3 of 3

## 7. Reports

### 7.1 MOT Module – Management Operational Tool

The **Management Operational Tool (MOT)** helps farmers evaluate the economic performance of different soil restoration strategies by focusing on two main indicators:

- **Gross Margin**
  - Calculates the gross margin per hectare for each crop.
  - Compares both **baseline** and **alternative** soil restoration strategies.
  - Shows the difference in revenues and variable costs, providing insight into the immediate financial results of adopting a strategy.
- **Break Even Point**
  - Identifies the point at which total income equals total costs, meaning the profit is zero.
  - Helps farmers determine the minimum yield or revenue required to cover production costs.
  - Useful for assessing the financial risk of introducing new soil recovery measures.

By using the MOT Module, farmers can **analyze short-term profitability** and decide whether a given soil restoration practice is financially sustainable before committing to long-term strategies.

MOT Module

*i* **Management Operational Tool (MOT)** calculates the gross margin for each crop per hectare for base and alternative soil restoration strategies. Also, it calculates the break-even point – the point in which the income covers the cost, and the profit is zero.

Gross Margin

Break Even Point

#### 7.1.1 Report Preparation – Gross Margin Module

In the **Gross Margin module**, reports are generated based on the information entered in the system. Each module uses specific variables, some of which are **mandatory**.

- **Mandatory variables** are highlighted in **red** (e.g., *Crop*, *Farming Year*). A report can only be generated once all mandatory variables are filled in.
- **Variable lists** appear as drop-down menus. Users can select values directly or use the search option to quickly locate the required entry. Once found, the item can be selected with a mouse click or by pressing **Enter**.

- **Generating results** is done by clicking **Start report**.

On the screen:

1. **Select Crop** – choose the crop for which the report will be generated.
2. **Enter Farming Year** – select the relevant agricultural year from the drop-down list.
3. **Click Start report** – to generate the results.

This ensures that the report reflects the chosen parameters and produces accurate results for analysis.

## 7.1.2 Report Preparation – Break Even Module

In the **Break Even module**, the toolbar and results area provide options for managing and analyzing generated reports.

### 1. Report Toolbar

The toolbar at the top contains several key buttons:

- **Information** – explains the purpose of the report and the type of information it provides to the user.
- **Excel** – exports all result tables into MS Excel for further use.
- **Print** – sends the current report to a printer.
- **Start report** – generates a new report or refreshes an existing one after input values are updated.

### 2. Report Results

The lower section displays the calculated results in a structured table. Columns include:

- Crop
- Farming Year
- Soil Recovery Strategy
- Gross Margin
- Currency
- Critical Point

### 3. Export Options

Users can export the results in **.xlsx format** for further analysis outside the system.

This functionality ensures that users not only view results directly in the platform but also save and share them in standard formats.



## 7.2 CBAT Module – Cost-Benefit Analysis Tool

The **Cost-Benefit Analysis Tool (CBAT)** is designed to support farmers in comparing the **baseline** and **alternative soil restoration strategies (SRS)**. It evaluates both revenues and costs, allowing users to assess the financial feasibility and return on investment (ROI) of each strategy.

This module provides two key analytical tools:

- **Partial Budget**
  - Calculates the net effect of adopting an alternative soil restoration strategy.
  - Focuses on the *incremental costs* and *incremental benefits* that result from switching strategies.
  - Helps the farmer decide whether the alternative practice generates financial improvement compared to the baseline.
- **Dynamic Cost-Benefit Analysis**
  - Extends the analysis by considering changes in revenues and costs over time.
  - Includes the **discount rate** to evaluate the present value of future cash flows.
  - Provides a more detailed long-term perspective on the investment and its sustainability.

Together, these tools allow farmers to make **evidence-based decisions** about adopting soil recovery practices, ensuring that both short-term and long-term effects are taken into account.

## CBAT Module

**i** Cost-Benefit Analysis Tool (CBAT) calculates the partial budget for comparative analysis of the changes in revenues and costs between baseline and alternative soil restoration strategies. A dynamic analysis is used to evaluate the return on investment for each soil restoration strategy.



Partial Budget



Dynamic Cost-Benefit Analysis

### 7.2.1 CBAT – Partial Budget

The **Partial Budget** screen in the **Cost-Benefit Analysis Tool (CBAT)** allows the farmer to compare the economic results of a **baseline** soil restoration strategy with an **alternative** one.

- **Mandatory variables** (highlighted in red):
  - **Choose base Gross Margin for Season/Crop for Comparing** – select the baseline gross margin as the reference.
  - **Choose alternate Gross Margin for Season/Crop for Comparing** – select the alternative gross margin to be compared against the baseline.
- **Currency selection** – choose the currency for the calculation. By default, the system displays the current exchange rate (e.g., Euro).

Once both gross margins are selected, the farmer can generate the report by clicking **Start Report**, which produces a comparative table showing **changes in revenues and costs** between the two strategies.

This tool is useful for quickly identifying whether an alternative soil restoration strategy is more profitable or cost-efficient compared to the current (baseline) one.

### 7.2.2 CBAT – Dynamic Cost-Benefit Analysis

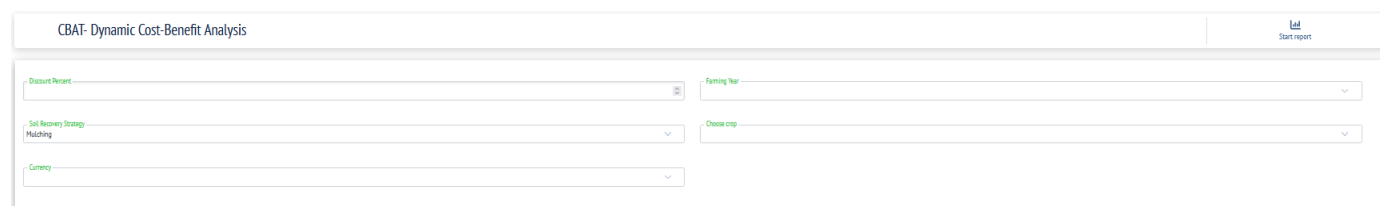
The **Dynamic Cost-Benefit Analysis** screen is used to evaluate the **long-term profitability** of a soil restoration strategy by discounting future costs and revenues to their present value.

- **Mandatory variables:**
  - **Discount Percent** – enter the discount rate (e.g., 3%, 5%, 7%), which is used to calculate the present value of future cash flows.
  - **Farming Year** – select the reference year for the calculation.
  - **Soil Recovery Strategy** – choose the restoration method to be assessed (e.g., mulching, cover crops, green manure).
  - **Choose Crop** – select the crop to which the strategy is applied.
- **Currency** – select the currency in which all values will be expressed (e.g., Euro).

After filling in these variables, the farmer can click **Start Report** to generate the dynamic cost-benefit analysis. The output provides indicators such as:

- **Net Present Value (NPV)**
- **Benefit-Cost Ratio (BCR)**
- **Internal Rate of Return (IRR)**

This analysis helps farmers and policymakers understand whether an investment in a specific soil restoration strategy is financially sustainable in the medium and long term.

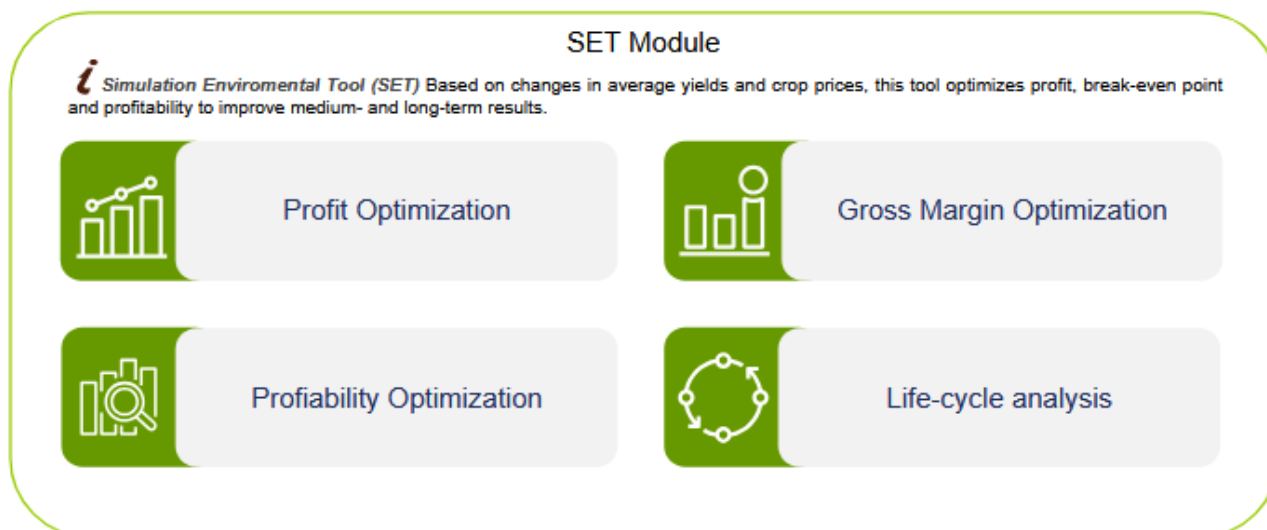


## 7.3 SET Module – Simulation Environmental Tool

The **Simulation Environmental Tool (SET)** is designed to support farmers in improving their medium- and long-term economic outcomes. Based on changes in **average yields** and **crop prices**, it provides advanced optimization tools for decision-making. The module includes four main functions:

- **Profit Optimization**
  - Maximizes overall farm profit by adjusting strategies for yields, costs, and revenues.
  - Helps identify the most financially effective soil restoration approach.
- **Gross Margin Optimization**
  - Focuses on optimizing gross margin per hectare.
  - Compares results across baseline and alternative soil recovery strategies to highlight the best-performing option.
- **Profitability Optimization**
  - Examines profitability ratios by relating costs to expected returns.
  - Useful for evaluating the sustainability of investments and strategies over time.
- **Life-cycle Analysis**
  - Provides a holistic view of costs and revenues across the entire production cycle.
  - Helps assess the **long-term impact** of soil restoration strategies on farm performance.

By using the SET Module, farmers can **evaluate scenarios, minimize risks, and plan ahead**, ensuring resilient farm management under changing economic and environmental conditions.



### 7.3.1 SET – Profit Optimization

The **Profit Optimization** screen is part of the **Simulation Environmental Tool (SET)** module. It is designed to help farmers simulate how different strategies affect overall farm profit.

- **Mandatory variable:**
  - **Version No** – select the version of the Gross Margin (base or alternative) to be analyzed. This ensures that the optimization is based on the correct data set.
- **Currency** – choose the currency in which the profit results will be displayed (e.g., Euro).

Once the inputs are selected, the user must click **Start Report** to generate the results.

This functionality supports decision-making by highlighting which soil restoration strategy yields the highest profitability.

The screenshot shows the 'SET - Profit Optimization' interface. It features a header bar with the title 'SET - Profit Optimization' and a 'Start report' button. Below the header, there are two input fields: 'Version No' (with a dropdown arrow) and 'Currency' (with a dropdown arrow). The 'Currency' field is currently set to 'Euro (12/12/2024-1.918000)'.

### 7.3.2 SET – Gross Margin Optimization

The **Gross Margin Optimization** screen is part of the **Simulation Environmental Tool (SET)** module. It allows farmers to simulate and identify strategies that maximize the gross margin per hectare.

- **Mandatory variable:**
  - **Version No** – select the version of the Gross Margin (base or alternative) that will be used for optimization.
- **Currency** – define the currency for displaying results (e.g., Euro).

After providing the required inputs, click **Start Report** to generate the results.

This functionality helps evaluate which soil restoration strategy yields the **highest gross margin**, thus supporting better farm management decisions.

SET - Gross margin Optimization	Start report
Version No	Currency Euro (31/12/2024-1.98000)

### 7.3.3 SET – Profitability Optimization

The **Profitability Optimization** screen belongs to the **Simulation Environmental Tool (SET)** module. It is designed to help farmers and decision-makers identify strategies that maximize overall farm profitability, taking into account both revenues and costs.

- **Mandatory variable:**
  - **Version No** – select the version of the Gross Margin (base or alternative) to be analyzed for profitability optimization.
- **Currency** – choose the currency in which the profitability results will be expressed (e.g., Euro).

Once the required fields are completed, click **Start Report** to generate the analysis.

The report provides:

- Profitability ratios comparing baseline and alternative strategies;
- Assessment of the return on investment (ROI) for different soil restoration strategies;
- Identification of the most profitable long-term option.

This tool supports evidence-based decision-making by showing which strategy ensures the best balance between income and expenses.

SET - Profitability Optimization	Start report
Version No	Currency Euro (31/12/2024-1.98000)

### 7.3.4 SET – Life-cycle analysis

The **Life-cycle analysis** screen is part of the **Simulation Environmental Tool (SET)** module. It allows the farmer to simulate and evaluate the environmental and economic effects of different soil restoration practices throughout their life cycle.

- **Mandatory variable:**
  - **Version No** – select the version of the Gross Margin (base or alternative) for which the life-cycle analysis will be performed.
- **Additional parameters:**
  - **Tilled** – specify whether the land is tilled or not.
  - **Rewetted** – indicate whether the land has been rewetted (important for soil health and emissions).
  - **Cover crops spread** – select if cover crops are used as a soil improvement method.
  - **Cover crops removed** – define whether cover crops are removed after use.
  - **Water supply** – provide information on the irrigation or water management system.
  - **Combustible** – indicate the type of energy or combustible resources applied.

After entering the required data, the user must click **Start report** to generate the analysis.

SET - Life-cycle analysis

Start report

Version 1.0

Title

Revised

Cover crops spread

Cover crops removed

Water supply

Combustible

## 8. Policy Level

The Policy Level module provides access to higher-level policy and strategy information. It is designed for users who need to analyze aggregated data and support decision-making processes.

### 8.1 Policy Maker Tool

The Policy Maker Tool (PMT) provides a set of analytical instruments designed to support decision-making at the policy level. The module allows users to evaluate different economic aspects, simulate scenarios, and optimize results according to specific objectives.

The following tools are available in the Policy Maker Tool menu:

- PMT – Gross Margin
- PMT – Break Even Point
- PMT – Partial Budget
- PMT – Dynamic Cost-Benefit Analysis
- PMT – Profit Optimization
- PMT – Gross Margin Optimization
- PMT – Profitability Optimization

### 8.2 PMT – Gross Margin

The Gross Margin tool allows the user to calculate the gross margin for a selected crop and farming year. The input form includes the following fields:

- Crop name – select the crop for which the gross margin will be calculated.
- Soil Recovery Strategy – choose the applied soil recovery or restoration strategy.
- Farming Year – define the agricultural year of reference.
- Currency – specify the currency used in the calculation.
- Country – select the country context for the analysis.

After filling in all required fields, click Start report to generate the calculation.

TUDI Socio-economic soil restoring digital supporting toolkit

Desktop

PMT - Gross margin

Start report

Crop name

Soil Recovery Strategy

Farming Year

Currency (Euro (EUR) 1.98800)

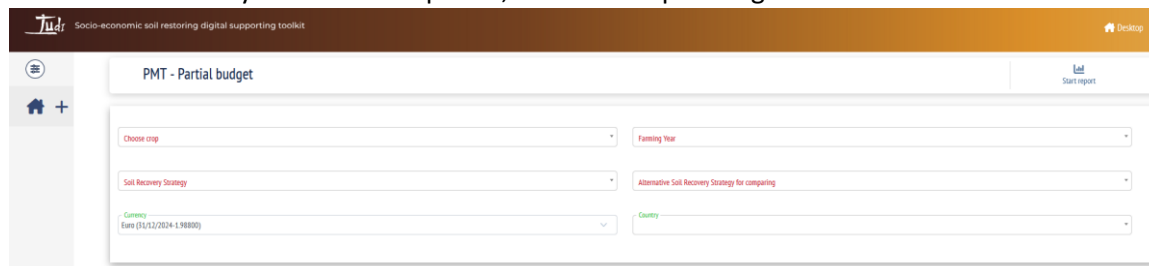
Country

## 8.3 PMT – Partial Budget

The Partial Budget tool evaluates the financial impact of adopting or changing a soil recovery strategy. The form requires the following inputs:

- Choose crop – select the crop for the analysis.
- Farming Year – define the agricultural year of reference.
- Soil Recovery Strategy – indicate the current soil recovery strategy.
- Alternative Soil Recovery Strategy for comparing – select an alternative strategy to compare against the current one.
- Currency – specify the currency used in the calculation.
- Country – choose the country context for the analysis.

When all mandatory fields are completed, click Start report to generate the results.

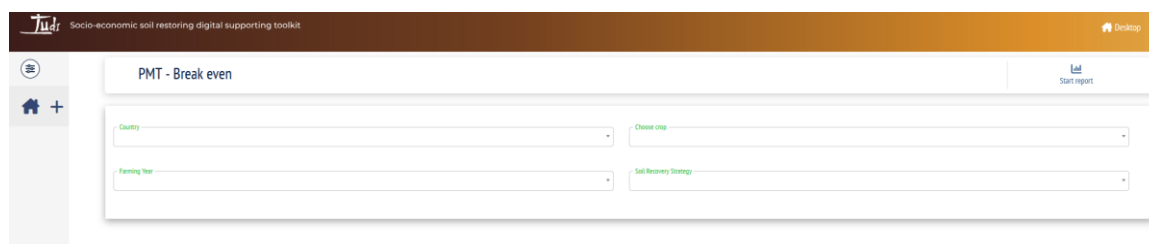


## 8.4 PMT – Break Even

The Break Even tool calculates the production or sales level at which revenues equal costs. The form requires the following fields:

- Country – select the country context for the analysis.
- Choose crop – select the crop for which the break-even point will be calculated.
- Farming Year – define the agricultural year of reference.
- Soil Recovery Strategy – choose the applied soil recovery or restoration strategy.

Once all required fields are completed, click Start report to generate the break-even analysis.



## 8.5 PMT – Dynamic Cost-Benefit Analysis

The Dynamic Cost-Benefit Analysis tool is used to evaluate the long-term costs and benefits of an investment or management strategy by applying discounting methods. The form includes the following fields:

- Choose crop – select the crop to be analyzed.
- Farming Year – define the agricultural year of reference.
- Soil Recovery Strategy – specify the applied soil recovery strategy.
- Country – select the country context for the analysis.
- Currency – define the currency used for calculations.
- Discount Percent – enter the discount rate to be applied in the analysis.

After entering all required values, click Start report to generate the dynamic cost-benefit evaluation.

The screenshot shows the 'PMT - Dynamic cost-benefit analysis' form within the TUDI Socio-economic soil restoring digital supporting toolkit. The form includes a sidebar with navigation icons (home, plus, menu) and a 'Desktop' button. The main form area has a title bar with the TUDI logo and a 'Start report' button. Below the title bar, there are four input fields: 'Choose crop' (dropdown), 'Farming Year' (dropdown), 'Soil Recovery Strategy' (dropdown), and 'Country' (dropdown). At the bottom, there are two more fields: 'Discount Percent' (text input) and 'Currency' (dropdown). The 'Currency' dropdown is currently set to 'Euro (€) (12/2024-1.98800)'.

## 8.6 PMT – Profit Optimization

The Profit Optimization tool supports the identification of strategies to maximize farm profit under specific conditions. The input form includes the following fields:

- Country – select the country context for the analysis.
- Choose crop – select the crop to be analyzed.
- Soil Recovery Strategy – choose the applied soil recovery strategy.
- Farming Year – define the agricultural year of reference.
- Currency – specify the currency used for the calculations.

After completing all fields, click Start report to generate the optimization results.

The screenshot shows the 'PMT - Profit optimization' form within the TUDI Socio-economic soil restoring digital supporting toolkit. The form includes a sidebar with navigation icons (home, plus, menu) and a 'Desktop' button. The main form area has a title bar with the TUDI logo and a 'Start report' button. Below the title bar, there are four input fields: 'Country' (dropdown), 'Choose crop' (dropdown), 'Soil Recovery Strategy' (dropdown), and 'Farming Year' (dropdown). At the bottom, there is a 'Currency' dropdown set to 'Euro (€) (12/2024-1.98800)'.

## 8.7 PMT – Gross Margin Optimization

The Gross Margin Optimization tool provides scenarios for maximizing the gross margin of a selected crop under specific conditions. The form includes the following inputs:

- Choose crop – select the crop for analysis.
- Farming Year – specify the agricultural year of reference.
- Soil Recovery Strategy – indicate the applied soil recovery strategy.
- Country – select the country context for the analysis.
- Currency – define the currency used for calculations.

After completing all required fields, click Start report to generate the optimization results.

The screenshot shows the 'PMT - Gross margin optimization' form within the TUDI Socio-economic soil restoring digital supporting toolkit. The form includes a sidebar with navigation icons (home, plus, menu) and a 'Desktop' button. The main form area has a title bar with the TUDI logo and a 'Start report' button. Below the title bar, there are four input fields: 'Choose crop' (dropdown), 'Farming Year' (dropdown), 'Soil Recovery Strategy' (dropdown), and 'Country' (dropdown). At the bottom, there is a 'Currency' dropdown set to 'Euro (€) (12/2024-1.98800)'.

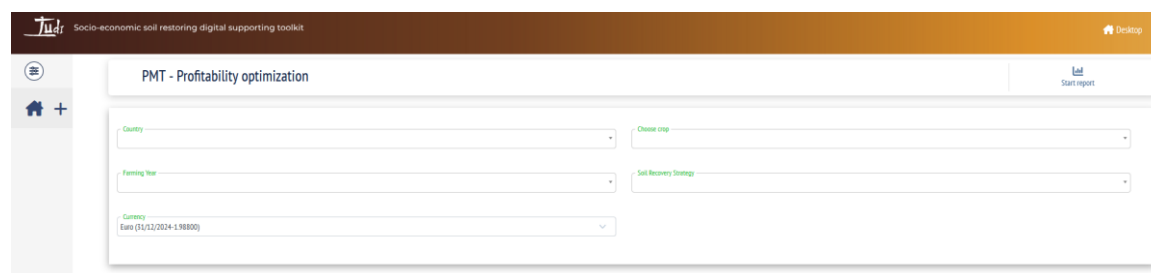


## 8.8 PMT – Profitability Optimization

The Profitability Optimization tool focuses on improving the overall profitability of farm activities by evaluating multiple parameters. The input form includes the following fields:

- Country – select the country context for the analysis.
- Choose crop – select the crop to be analyzed.
- Farming Year – define the agricultural year of reference.
- Soil Recovery Strategy – indicate the applied soil recovery strategy.
- Currency – specify the currency used for the calculations.

After completing the required fields, click Start report to generate the profitability optimization results.



The screenshot shows the 'PMT - Profitability optimization' form within the 'TUDI Socio-economic soil restoring digital supporting toolkit' interface. The form is titled 'PMT - Profitability optimization' and includes a 'Start report' button. The form contains five input fields: 'Country', 'Choose crop', 'Farming Year', 'Soil Recovery Strategy', and 'Currency'. The 'Currency' field is currently set to 'Euro (€) (2024-1.98800)'. The form is displayed on a desktop view, as indicated by the 'Desktop' label in the top right corner.