



EASE tool User Manual



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The following document contains all the information that the user needs to utilise in the EASE (Egnos sAvingS in AgriculturE) tool available in the [EGNOS User Support Website](#). The EASE tool allows farmers to perform cost-benefit analyses (CBA) on the use of EGNOS in comparison with less accurate solutions: GPS alone or no machinery guidance at all. This manual includes descriptions of the different screens of the tool and explains how to interact with them in order to calculate the corresponding EGNOS savings for multiple agricultural activities.

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1 INTRODUCTION

The EASE (Egnos sAvingS in agriculturE) tool, available in the [EGNOS User Support Website](#), allows user to get an indicative idea of the economic savings that they would obtain by means of the application of EGNOS instead of employing GPS alone or no machinery guidance at all. In this way, each farmer can assess for his/her particular case the convenience (or not) of the adoption of EGNOS.

The cost-benefit analysis (CBA) provided by the EASE tool is limited to extensive crops in dry areas, as they are the typical ones requiring a positioning accuracy compatible with EGNOS, i.e. submetric absolute error and a pass to pass (P2P) error lower than 30 cm. We therefore refer to winter cereals (barley and wheat), legumes and sunflower, where water and high temperatures are the main crop yield limitation factors.

As it is extensively explained in the [EASE Tool Methodology](#) document, the calculation of potential savings is based on the objective improvement provided by EGNOS with respect lower-accuracy solutions, considering the different pass-to-pass errors typically provided. For this purpose the EASE tool compares the results that could be obtained using EGNOS with respect to another GNSS solution of lower precision than EGNOS, which can be:

- Unaided driver: The farmer does not use any assistance method to drive the tractor.
- GPS alone: The farmer is using only GPS (or GPS + GLONASS), without any kind of correction solution, to drive the tractor.

The pass-to-pass error can occur in two ways with different consequences:

- Overlap: the same area is treated twice, so there is a waste of inputs (if applicable), fuel and time.
- Underlap: some area remains without treatment, so there is a reduction in quantity and/or quality of yields.

From these two options, in order to derive objectively the benefits of EGNOS for farmers as a function of the pass-to-pass error, the EASE tool considers that the error is committed always as an overlap over the previous pass, without any underlap. The reason is that it is easier to quantify the waste of resources than the yield reduction, which depends highly on each specific case. Furthermore, in practice, overlap is more common than underlap, as farmers tend to be very cautious and avoid skips, even planning the passes with working widths that are longer than the implement itself, to assure that no area remains untreated. For them, in general, no treatment is rather worse than overtreatment.

The summary of the different farming activities, as well as the type of savings that apply to each of them, that are considered by the EASE tool to derive EGNOS benefits is shown in *Table 1*. The different classes of savings are described in detail and formally established in the [EASE Tool Methodology](#) document.

Activity	Savings		
	Fuel	Input (seeds, fertiliser, herbicide, ...)	Time/Labour
Ploughing	✓	✗	✓
Sowing	✓	✓	✓
Spreading	✓	✓	✓
Spraying	✓	✓	✓
Harvesting	✓	✗	✓

Table 1: Activities and savings considered in the EASE tool.

It must be also stated that there are also some EGNOS benefits that are difficult to quantify in economic terms and therefore cannot be taken into account by the EASE tool:

- vs. unaided driver:
 - o Driver fatigue reduction
 - o Possibility of working under low visibility conditions (nightfall/sunrise, night, fog, heavy rain, etc.)
- vs. both unaided driver and GPS:
 - o Extension of the useful life of machinery
 - o Improvement of soil yield

2 EASE TOOL STRUCTURE

The EASE tool provides an intuitive and user-friendly interface to facilitate the performance of the different steps needed to complete the CBA. It consists of a set of consecutive screens that guide the user easily along process. If the user wants to modify any data already entered, he can come back to any previous step to do it.

The diagram that represents the flow of screens of the EASE tool is shown in Figure 1. It can be seen that there are four main screens, related to welcome, configuration, farming activities specification and results, respectively. In addition, the activities screen interacts with other five secondary screens, one for each of the possible farming activities that can benefit from EGNOS:

1. Ploughing
2. Sowing
3. Spreading
4. Spraying
5. Harvesting

The detail descriptions of the different screens and the corresponding instructions for users are provided in the following sections.

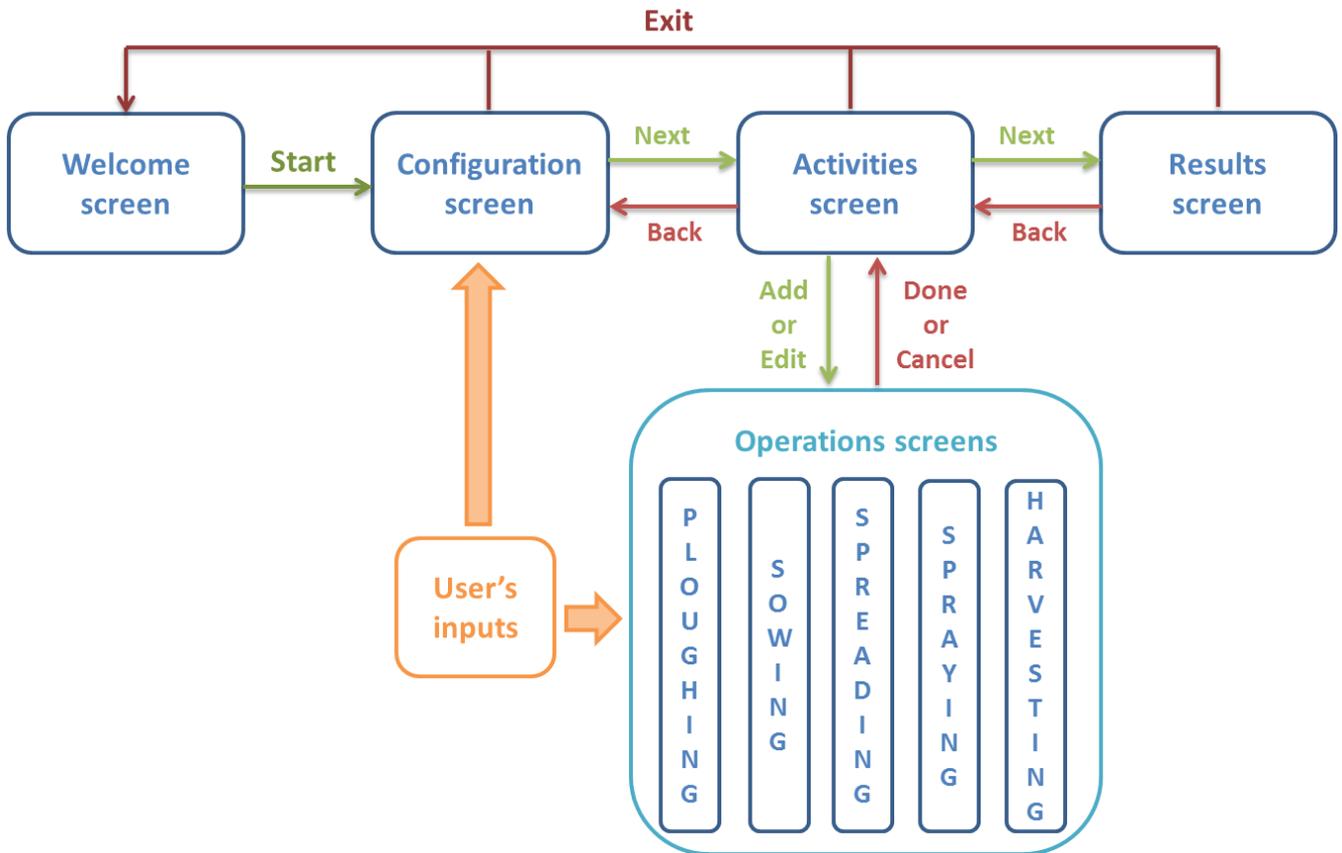


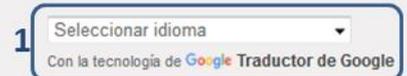
Figure 1: Diagram of the structure of the EASE tool.

3 WELCOME SCREEN

The welcome screen of the EASE tool shows a brief description of the tool and disclaimer about its purposes and scope. There are also several buttons and links for user interaction, specifically related to translation, tool launch, documentation and support email. A screenshot of the welcome screen is presented in Figure 2. All the important interaction items of this page are identified in the image and the corresponding instructions for users are commented below.

HOME » RESOURCES & TOOLS » EASE TOOL

EASE Tool



The EASE (Egnos sAvingS in agriculturE) tool intends to provide farmers with cost-benefit analyses on the introduction of EGNOS for machinery guidance in some of their typical agricultural labours. A comprehensive (but pragmatic) model has been built, in order to try to be simple but also true to reality. The methodology takes into account the specific circumstances, considering both costs and labour practices, of each farmer. The tool can perform scalable studies, including as many operation tasks as the farmer considers relevant. In the end, the user can print or export the results obtained. The EASE tool is recommended for those types of crops that do not require very high precision solutions, i.e. extensive crops in dry areas, such as dryland cereals, legumes and sunflowers.

2 [Launch the tool](#)

[Click to download the EASE tool methodology.](#) 3

[Click to download the EASE tool user manual.](#) 4

Disclaimer: The EASE tool is designed for general awareness and promotion purposes only. The results of the analysis are estimated based on different input parameters and internal models and may vary from the farmer's real operation performance. For any further inquiry or clarification please contact the EGNOS Service Adoption team via the EGNOS Helpdesk mailbox: egnos-helpdesk@essp-sas.eu. 5

Figure 2: Welcome screen and its main elements for user interaction.

1. Translation functionality: The text of the EASE tool is in English by default. The user can translate it to any other language, just selecting it in this input panel. Please note that the translation is done automatically by a computer engine so interpretation and ambiguity errors can be found, so we recommend being cautious with the new texts provided.
2. “Launch the tool” button: The user shall click on this button in order to start the EASE tool, going to the first operational screen, which is the configuration one (see section 4).
3. “Click to download the EASE tool methodology” button: The user shall click on this button in order to open a pdf document that explains in detail the methodology followed to perform the CBA of the EASE tool.
4. “Click to download the EASE tool user manual” button: The user shall click on this button in order to open a pdf document with the user manual of the EASE tool.
5. EGNOS helpdesk email: The user shall click on this button to send an email asking of support on the EASE tool.

4 CONFIGURATION SCREEN

The configuration screen aims at gathering from the farmer all the general information that is common to the different activities to be carried out, namely: crop area, type of crop, country, fuel price, carbon emissions, labour cost, tractor guidance and EGNOS solution. There are two types of inputs, those related to the real farmer crops and operation, under the tag “Farming data”, and those related to the “EGNOS solution” considered to perform the CBA.

Please note that typical/logical default values are provided in all the different input, so the user is not obliged to fill them. However, it must be also noted that the more number of data to be specified according to the farmer's reality, the more accurate would be the final results with respect to the farmer's actual economy. A screenshot of the configuration screen is presented in Figure 3. All the important interaction items of this page are identified in the image and the corresponding instructions for users are commented below.

AGRI EASE Tool

1 **Exit the tool**

2 Seleccionar idioma
Con la tecnología de Google Traductor de Google

Typical values are set by default for all fields in order to facilitate the CBA completion by the user. However, in order to obtain representative results, the user should provide his own data when possible.

Configuration (1/2)

Farming data 3

Crop area (ha) *	10.00
Type of crop	
Fuel price (€/l) *	1.32
Labour cost (€/h) *	9.38
Tractor guidance solution to be compared with EGNOS *	None

EGNOS solution 4

Mode *	Manual
Equipment cost (€) *	1500.00

* Required field

5 **Next**

Figure 3: Configuration screen and its main elements for user interaction.

1. “Exit the tool” button: The user shall click on this button to exit the EASE tool and come back to the welcome screen.
IMPORTANT: All the data already entered would be deleted and any new analysis would need to be started from scratch.
2. Translation functionality: The text of the EASE tool is in English by default. The user can translate it to any other language, just selecting it in this input panel. Please note that the translation is done automatically by a computer engine so interpretation and ambiguity errors can be found, so we recommend being cautious with the new texts provided.
3. Farming data: Information corresponding to the general features of the crop exploitation. Typical values are provided by default, but the user is encouraged to specify its own data for more representative results.
IMPORTANT: The parameters with an asterisk * are mandatory, the others are optional and can be left blank. Each input field has an information pop-up, just hover the pointer over the symbol  , that provides specific information about it.
4. EGNOS solution: Information corresponding to the EGNOS solution to be considered by the EASE tool for the analysis. Typical values are provided by default, but the user is encouraged to specify its own data for more representative results. The parameters are mandatory.
IMPORTANT: Each input field has an information pop-up, just hover the pointer over the symbol  , that provides specific information about it.
5. “Next” button: The user shall click on this button in order go to the next step, i.e. the activities screen (see section 5).

5 ACTIVITIES SCREEN

The activities screen allows the user to create new specific farming activities that are applied to the crop field, to be considered by the EASE tool in the analysis. The five main agricultural activities that can benefit from EGNOS machinery guidance are included: ploughing, sowing, spreading, spraying and harvesting. If the user clicks on any of these buttons, he goes to the corresponding operation screen (see section 6).

Moreover, once some activities are added, it is shown also in this screen a table that summarises them. Then, for each created activity, the user can edit or delete it. It must be noted that if the user goes back to the configuration screen, the activities already created remain available. Furthermore, if the user go back to the configuration screen, modify any configuration input, and then advance again to the activities screen, then the data of the summary table is be updated accordingly.

A screenshot of the activities screen is presented in Figure 4. All the important interaction items of this page are identified in the image and the corresponding instructions for users are commented below.

AGRI EASE Tool

—

1 Exit the tool

2

Seleccionar idioma
Con la tecnología de Google Traductor de Google

Typical values are set by default for all fields in order to facilitate the CBA completion by the user. However, in order to obtain representative results, the user should provide his own data when possible.

Activities (2/2)

Add Activity

3

Ploughing

Sowing

Spreading

Spraying

Harvesting

Summary of activities

4

Activity	Number of times	Working width (m)	Fuel consumption (l/ha)	CO ₂ emissions savings (kg)	Mean speed (km/h)	Product applied (kg;l/ha)	Product price (€/kg;l)	EGNOS savings (€)	Actions	
									5	6
Ploughing	1	5	20	21.2	8	N/A	N/A	11.5	Edit	Delete
Sowing	1	5	8	8.48	8	150	1	65.16	Edit	Delete
Spreading	1	5	2	2.12	8	150	1.5	91.99	Edit	Delete
Spraying	1	5	2	2.12	8	2	15	13.99	Edit	Delete
Harvesting	1	5	12	12.72	8	N/A	N/A	7.27	Edit	Delete

7

8

Previous

Results

Figure 4: Activities screen and its main elements for user interaction.

- “Exit the tool” button: The user shall click on this button to exit the EASE tool and come back to the welcome screen.
IMPORTANT: All the data already entered would be deleted and any new analysis would need to be started from scratch.
- Translation functionality: The text of the EASE tool is in English by default. The user can translate it to any other language, just selecting it in this input panel. Please note that the translation is done automatically by a computer engine so interpretation and ambiguity errors can be found, so we recommend being cautious with the new texts provided.
- “Add Activity” buttons: The user shall click on these buttons to go to the corresponding operations screen (see section 6) and add any new specific activity to the summary table and therefore to the EASE tool analysis.
- “Summary of activities” table: The user can see in this table all of the activities already added to the analysis, along with their more relevant features and the total EGNOS savings. In addition, the user can edit or delete any of them.

5. “Edit” button: The user shall click on this button to modify the features of the corresponding activity. If it is pushed the user goes to the corresponding operation screen (see section 6) to change any of the data already provided.
6. “Delete” button: The user shall click on this button to completely remove the activity from the list, so it is no longer taken into account for the ESEA tool analysis.
7. “Previous” button: The user shall click on this button to come back to the configuration screen. Please note that the activities already created remain available. Even more, if the user go back to the configuration screen, modify any configuration input, and then advance again to the activities screen, then the data of the summary table is be updated accordingly.
8. “Results” button: The user shall click on this button to go to the results screen and see the CBA outcome according to the information and activities provided in that moment (see section 7).

6 OPERATIONS SCREENS

In the different operations screens, the farmer can provide additional data about his operations, which is specific of each activity: ploughing, sowing, spreading, spraying and harvesting. In this sense, following the aforementioned approach, typical/logical values are provided by default in case the user does not want to enter his owns.

In addition, the CBA results of each individual activity that is created are calculated and shown. Therefore, each screen is divided into two main parts, one corresponding to the needed inputs of that specific activity and other providing the EGNOS savings per category: fuel, carbon emissions, labour and product (this last one, if applicable).

6.1 PLOUGHING SCREEN

A screenshot of the ploughing screen is presented in Figure 5. All the important interaction items of this page are identified in the image and the corresponding instructions for users are commented below.

AGRI EASE Tool

1

2
 Con la tecnología de  Traductor de Google

Typical values are set by default for all fields in order to facilitate the CBA completion by the user. However, in order to obtain representative results, the user should provide his own data when possible.

Ploughing

3

4 **Activity data**

Working width (m) *	<input type="text" value="5"/>	
Fuel consumption (l/ha) *	<input type="text" value="20"/>	
Mean speed (km/h) *	<input type="text" value="8"/>	
Number of times along campaign *	<input type="text" value="1"/>	

5 **EGNOS savings**

Fuel savings (l)	<input type="text" value="0.00"/>	
Fuel expense savings (€)	<input type="text" value="0.00"/>	
CO ₂ emissions savings (kg)	<input type="text" value="0.00"/>	
Labour savings (h)	<input type="text" value="0.00"/>	
Labour expense savings (€)	<input type="text" value="0.00"/>	
Total EGNOS savings (€)	<input type="text" value="0.00"/>	

6 * Required field

7

Figure 5: Ploughing screen and its main elements for user interaction.

1. “Exit the tool” button: The user shall click on this button to exit the EASE tool and come back to the welcome screen.
IMPORTANT: All the data already entered would be deleted and any new analysis would need to be started from scratch.
2. Translation functionality: The text of the EASE tool is in English by default. The user can translate it to any other language, just selecting it in this input panel. Please note that the translation is done automatically by a computer engine so interpretation and ambiguity errors can be found, so we recommend being cautious with the new texts provided.

3. “Apply” button: The user shall click on this button to update the EGNOS savings results, shown in the lower part of the screen, according to the input activity data provided in upper part of the screen.
4. Activity data: The user shall enter the ploughing data of the exploitation under analysis. Typical values are provided by default, but the user is encouraged to specify its own data for more representative results. Each input field has an information pop-up, just hover the pointer over the symbol  , that provides specific information about it.
5. EGNOS savings: The economic benefits of using EGNOS in this specific ploughing activity, considering the activity data entered, are shown here. Please note that to update these results the “Apply” button needs to be pushed.
6. “Cancel” button: The user shall click on this button to go back to the activities screen without saving the activity.
7. “Save” button: The user shall click on this button to save the activity, along with the current input data, and go back to the activities screen.

6.2 SOWING SCREEN

A screenshot of the sowing screen is presented in Figure 6. All the important interaction items of this page are identified in the image and the corresponding instructions for users are commented below.

AGRI EASE Tool

1

2
Con la tecnología de Google Traductor de Google

Typical values are set by default for all fields in order to facilitate the CBA completion by the user. However, in order to obtain representative results, the user should provide his own data when possible.

Sowing 3

4 **Activity data**

Working width (m) *	<input type="text" value="5"/>
Fuel consumption (l/ha) *	<input type="text" value="8"/>
Mean speed (km/h) *	<input type="text" value="8"/>
Seeds applied (kg/ha) *	<input type="text" value="150"/>
Seeds price (€/kg) *	<input type="text" value="1"/>
Number of times along campaign *	<input type="text" value="1"/>

5 **EGNOS savings**

Fuel savings (l)	<input type="text" value="0.00"/>
Fuel expense savings (€)	<input type="text" value="0.00"/>
CO ₂ emissions savings (kg)	<input type="text" value="0.00"/>
Labour savings (h)	<input type="text" value="0.00"/>
Labour expense savings (€)	<input type="text" value="0.00"/>
Product savings (kg)	<input type="text" value="0.00"/>
Product expense savings (€)	<input type="text" value="0.00"/>
Total EGNOS savings (€)	<input type="text" value="0.00"/>

* Required field 6 7

Figure 6: Sowing screen and its main elements for user interaction.

1. “Exit the tool” button: The user shall click on this button to exit the EASE tool and come back to the welcome screen.
IMPORTANT: All the data already entered would be deleted and any new analysis would need to be started from scratch.
2. Translation functionality: The text of the EASE tool is in English by default. The user can translate it to any other language, just selecting it in this input panel. Please note that the translation is done automatically by a computer engine so interpretation and ambiguity errors can be found, so we recommend being cautious with the new texts provided.

3. “Apply” button: The user shall click on this button to update the EGNOS savings results, shown in the lower part of the screen, according to the input activity data provided in upper part of the screen.
4. Activity data: The user shall enter the sowing data of the exploitation under analysis. Typical values are provided by default, but the user is encouraged to specify its own data for more representative results. Each input field has an information pop-up, just hover the pointer over the symbol  , that provides specific information about it.
5. EGNOS savings: The economic benefits of using EGNOS in this specific sowing activity, considering the activity data entered, are shown here. Please note that to update these results the “Apply” button needs to be pushed.
6. “Cancel” button: The user shall click on this button to go back to the activities screen without saving the activity.
7. “Save” button: The user shall click on this button to save the activity and go back to the activities screen.

6.3 SPREADING SCREEN

A screenshot of the spreading screen is presented in Figure 7. All the important interaction items of this page are identified in the image and the corresponding instructions for users are commented below.

AGRI EASE Tool

1 **Exit the tool**

2 **Seleccionar idioma**
Con la tecnología de Google Traductor de Google

Typical values are set by default for all fields in order to facilitate the CBA completion by the user. However, in order to obtain representative results, the user should provide his own data when possible.

3 **Apply**

Spreading

4 **Activity data**

Working width (m) *	<input type="text" value="5"/>
Fuel consumption (l/ha) *	<input type="text" value="2"/>
Mean speed (km/h) *	<input type="text" value="8"/>
Product applied (kg/ha) *	<input type="text" value="150"/>
Product price (€/kg) *	<input type="text" value="1.5"/>
Number of times along campaign *	<input type="text" value="1"/>

5 **EGNOS savings**

Fuel savings (l)	<input type="text" value="0.00"/>
Fuel expense savings (€)	<input type="text" value="0.00"/>
CO ₂ emissions savings (kg)	<input type="text" value="0.00"/>
Labour savings (h)	<input type="text" value="0.00"/>
Labour expense savings (€)	<input type="text" value="0.00"/>
Product savings (kg)	<input type="text" value="0.00"/>
Product expense savings (€)	<input type="text" value="0.00"/>
Total EGNOS savings (€)	<input type="text" value="0.00"/>

6 * Required field

7 **Cancel** **Save**

Figure 7: Spreading screen and its main elements for user interaction.

1. “Exit the tool” button: The user shall click on this button to exit the EASE tool and come back to the welcome screen.
IMPORTANT: All the data already entered would be deleted and any new analysis would need to be started from scratch.
2. Translation functionality: The text of the EASE tool is in English by default. The user can translate it to any other language, just selecting it in this input panel. Please note that the

translation is done automatically by a computer engine so interpretation and ambiguity errors can be found, so we recommend being cautious with the new texts provided.

3. “Apply” button: The user shall click on this button to update the EGNOS savings results, shown in the lower part of the screen, according to the input activity data provided in upper part of the screen.
4. Activity data: The user shall enter the spreading data of the exploitation under analysis. Typical values are provided by default, but the user is encouraged to specify its own data for more representative results. Each input field has an information pop-up, just hover the pointer over the symbol  , that provides specific information about it.
5. EGNOS savings: The economic benefits of using EGNOS in this specific spreading activity, considering the activity data entered, are shown here. Please note that to update these results the “Apply” button needs to be pushed.
6. “Cancel” button: The user shall click on this button to go back to the activities screen without saving the activity.
7. “Save” button: The user shall click on this button to save the activity and go back to the activities screen.

6.4 SPRAYING SCREEN

A screenshot of the spraying screen is presented in Figure 8. All the important interaction items of this page are identified in the image and the corresponding instructions for users are commented below.

AGRI EASE Tool

1 **Exit the tool**

2 [Seleccionar idioma]
 Con la tecnología de Google Traductor de Google

Typical values are set by default for all fields in order to facilitate the CBA completion by the user. However, in order to obtain representative results, the user should provide his own data when possible.

Spraying 3 **Apply**

Activity data 4

Working width (m) *	<input type="text" value="5"/>
Fuel consumption (l/ha) *	<input type="text" value="2"/>
Mean speed (km/h) *	<input type="text" value="8"/>
Product applied (l/ha) *	<input type="text" value="2"/>
Product price (€/l) *	<input type="text" value="15"/>
Number of times along campaign *	<input type="text" value="1"/>

EGNOS savings 5

Fuel savings (l)	<input type="text" value="0.00"/>
Fuel expense savings (€)	<input type="text" value="0.00"/>
CO ₂ emissions savings (kg)	<input type="text" value="0.00"/>
Labour savings (h)	<input type="text" value="0.00"/>
Labour expense savings (€)	<input type="text" value="0.00"/>
Product savings (l)	<input type="text" value="0.00"/>
Product expense savings (€)	<input type="text" value="0.00"/>
Total EGNOS savings (€)	<input type="text" value="0.00"/>

6 * Required field 7

Cancel **Save**

Figure 8: Spraying screen and its main elements for user interaction.

- “Exit the tool” button: The user shall click on this button to exit the EASE tool and come back to the welcome screen.
IMPORTANT: All the data already entered would be deleted and any new analysis would need to be started from scratch.

9. Translation functionality: The text of the EASE tool is in English by default. The user can translate it to any other language, just selecting it in this input panel. Please note that the translation is done automatically by a computer engine so interpretation and ambiguity errors can be found, so we recommend being cautious with the new texts provided.
10. “Apply” button: The user shall click on this button to update the EGNOS savings results, shown in the lower part of the screen, according to the input activity data provided in upper part of the screen.
11. Activity data: The user shall enter the spraying data of the exploitation under analysis. Typical values are provided by default, but the user is encouraged to specify its own data for more representative results. Each input field has an information pop-up, just hover the pointer over the symbol  , that provides specific information about it.
12. EGNOS savings: The economic benefits of using EGNOS in this specific spraying activity, considering the activity data entered, are shown here. Please note that to update these results the “Apply” button needs to be pushed.
13. “Cancel” button: The user shall click on this button to go back to the activities screen without saving the activity.
14. “Save” button: The user shall click on this button to save the activity and go back to the activities screen.

6.5 HARVESTING SCREEN

A screenshot of the harvesting screen is presented in Figure 9. All the important interaction items of this page are identified in the image and the corresponding instructions for users are commented below.

AGRI EASE Tool

1 **Exit the tool**

2 **Seleccionar idioma**
Con la tecnología de **Google** Traductor de Google

Typical values are set by default for all fields in order to facilitate the CBA completion by the user. However, in order to obtain representative results, the user should provide his own data when possible.

Harvesting

3 **Apply**

4 **Activity data**

Working width (m) *	<input type="text" value="5"/>
Fuel consumption (l/ha) *	<input type="text" value="12"/>
Mean speed (km/h) *	<input type="text" value="8"/>
Number of times along campaign *	<input type="text" value="1"/>

5 **EGNOS savings**

Fuel savings (l)	<input type="text" value="0.00"/>
Fuel expense savings (€)	<input type="text" value="0.00"/>
CO ₂ emissions savings (kg)	<input type="text" value="0.00"/>
Labour savings (h)	<input type="text" value="0.00"/>
Labour expense savings (€)	<input type="text" value="0.00"/>
Total EGNOS savings (€)	<input type="text" value="0.00"/>

6 * Required field

7 **Cancel** **Save**

Figure 9: Harvesting screen and its main elements for user interaction.

1. “Exit the tool” button: The user shall click on this button to exit the EASE tool and come back to the welcome screen.
IMPORTANT: All the data already entered would be deleted and any new analysis would need to be started from scratch.
2. Translation functionality: The text of the EASE tool is in English by default. The user can translate it to any other language, just selecting it in this input panel. Please note that the translation is done automatically by a computer engine so interpretation and ambiguity errors can be found, so we recommend being cautious with the new texts provided.
3. “Apply” button: The user shall click on this button to update the EGNOS savings results, shown in the lower part of the screen, according to the input activity data provided in upper part of the screen.

4. Activity data: The user shall enter the harvesting data of the exploitation under analysis. Typical values are provided by default, but the user is encouraged to specify its own data for more representative results. Each input field has an information pop-up, just hover the pointer over the symbol  , that provides specific information about it.
5. EGNOS savings: The economic benefits of using EGNOS in this specific harvesting activity, considering the activity data entered, are shown here. Please note that to update these results the “Apply” button needs to be pushed.
6. “Cancel” button: The user shall click on this button to go back to the activities screen without saving the activity.
7. “Save” button: The user shall click on this button to save the activity, along with the current input data, and go back to the activities screen.

7 RESULTS SCREEN

The results screen summarises the CBA results of the EASE tool, focusing on the different EGNOS savings provided by each activity: ploughing, sowing, spreading, spraying and harvesting and category: fuel, carbon emissions, labour and product.

Firstly, a table summarising the different activities considered in the CBA case is presented. Then another table with the different EGNOS savings is shown. Finally, the amortization of the EGNOS investment along campaigns, considering the very same set of activities, is derived and provided. A screenshot of the results screen is presented in Figure 10. All the important interaction items of this page are identified in the image and the corresponding instructions for users are commented below.

AGRI EASE Tool

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Typical values are set by default for all fields in order to facilitate the CBA completion by the user. However, in order to obtain representative results, the user should provide his own data when possible.

Results

3 Farming Activities

Activity	Number of times	Working width (m)	Fuel consumption (l/ha)	Mean speed (km/h)	Product applied (kg/l/ha)	Product price (€/kg:l)
Ploughing	1	5	20	8	N/A	N/A
Sowing	1	5	8	8	150	1
Spreading	1	5	2	8	150	1.5
Spraying	1	5	2	8	2	15
Harvesting	1	5	12	8	N/A	N/A

4 EGNOS SAVINGS RESULTS

Task	Fuel quantity (l)	Fuel expense (€)	CO ₂ emissions savings (kg)	Product expense (€)	Labour time (h)	Labour expense (€)	Total EGNOS savings (€)
Ploughing	8	10.56	21.2	N/A	0.1	0.94	11.5
Sowing	3.2	4.22	8.48	60	0.1	0.94	65.16
Spreading	0.8	1.06	2.12	90	0.1	0.94	91.99
Spraying	0.8	1.06	2.12	12	0.1	0.94	13.99
Harvesting	4.8	6.34	12.72	N/A	0.1	0.94	7.27
Total	17.6	23.23	46.64	162	0.5	4.69	189.92

5

Total EGNOS savings (€)	EGNOS investment (€)	Amortization (# harvest)
189.92	1500	8

6

Harvest	Accumulated profit (€)
0	-1500
1	-1310.08
2	-1120.16
3	-930.23
4	-740.31
5	-550.39
6	-360.47
7	-170.55
8	19.38
9	209.3
10	399.22

7 Previous 8 Print 9 Export

Figure 10: Results screen and its main elements for user interaction.

1. “Exit the tool” button: The user shall click on this button to exit the EASE tool and come back to the welcome screen.
IMPORTANT: All the data already entered would be deleted and any new analysis would need to be started from scratch.
2. Translation functionality: The text of the EASE tool is in English by default. The user can translate it to any other language, just selecting it in this input panel. Please note that the translation is done automatically by a computer engine so interpretation and ambiguity errors can be found, so we recommend being cautious with the new texts provided.
3. “Farming Activities” table: The user can see in this table all of the activities considered by the EASE tool to derive the CBA results, along with their more relevant features.
4. EGNOS SAVINGS RESULTS: The different benefits provided by EGNOS, in terms of fuel, carbon emissions, product and labour, for each of the activities considered by the EASE tool to derive the CBA results.
5. Table with the total EGNOS savings per harvest, initial EGNOS investment and amount of harvest that would be needed to amortize that initial expense.
6. Table with the evolution of the expected EGNOS accumulated profit per harvest.
7. “Previous” button: The user shall click on this button to go back to the activities screen.
8. “Print” button: The user shall click on this button to print the results of this page using any the user’s installed printers.
9. “Export” button: The user shall click on this button to export the results in an excel file with the default name of “EASE_tool_YYYY-MM-DD.xls”.