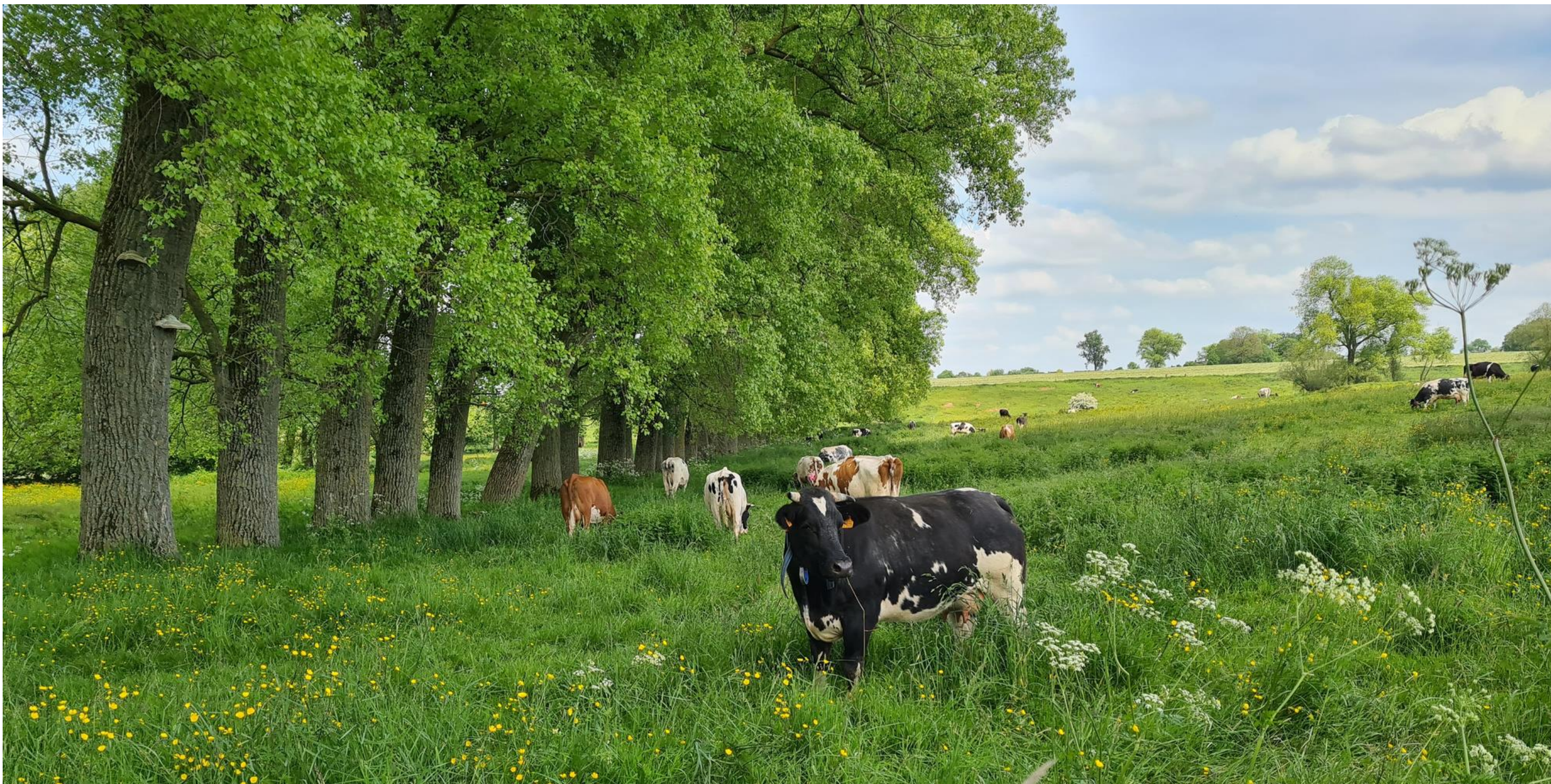




SUPPORTING FARMERS ONLINE WITH A USER-FRIENDLY DECISION SUPPORT TOOL: INTRODUCING THE **INTERACTIVE AGROFORESTRY COST-BENEFIT ANALYSIS TOOL (INTACT)**



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The project Farming the Future – Building Rural Networks for Climate-Adaptive Agriculture - FARM LIFE – is co-funded by the LIFE Programme of the European Union under contract number LIFE17 CCA/ NL/000093

INTRODUCTION

INSIGHT INTO COSTS AND BENEFITS OF AFS



Lack of understanding of costs and benefits is a major obstacle for interested farmers in Flanders and The Netherlands.

TREES/SHRUBS ARE OFTEN A NEW COMPONENT



How to ensure an easy understanding about costs and benefits of the tree component?

INTACT



Guiding users through the relevant tree and shrub-related costs and benefits.

OBJECTIVES

1 **CREATE A CLEAR STRUCTURE**

A step-wise approach within the Cost and Benefit modules, reflecting a chronological order from reality.

3 **GUARANTEE FLEXIBILITY REGARDING USER INPUT**

Pre-filled suggestions can be adjusted to the user's personal figures.

2 **GUARANTEE OPEN ACCESS**

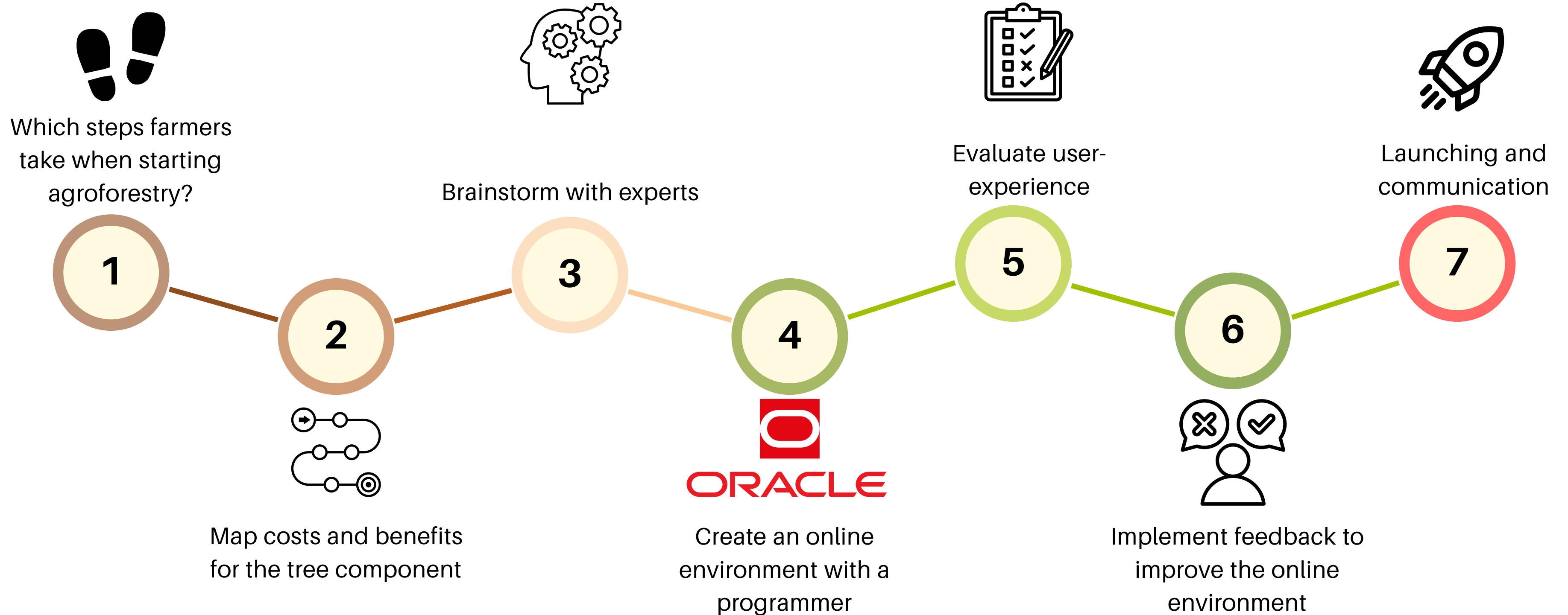
INTACT remains a free and open-access tool on the Agroforestry Planner:

4 **USER-FRIENDLINESS**

Intuitive navigation, responsive design, clear calls to actions, feedback mechanisms, interactive elements, and data visualization.

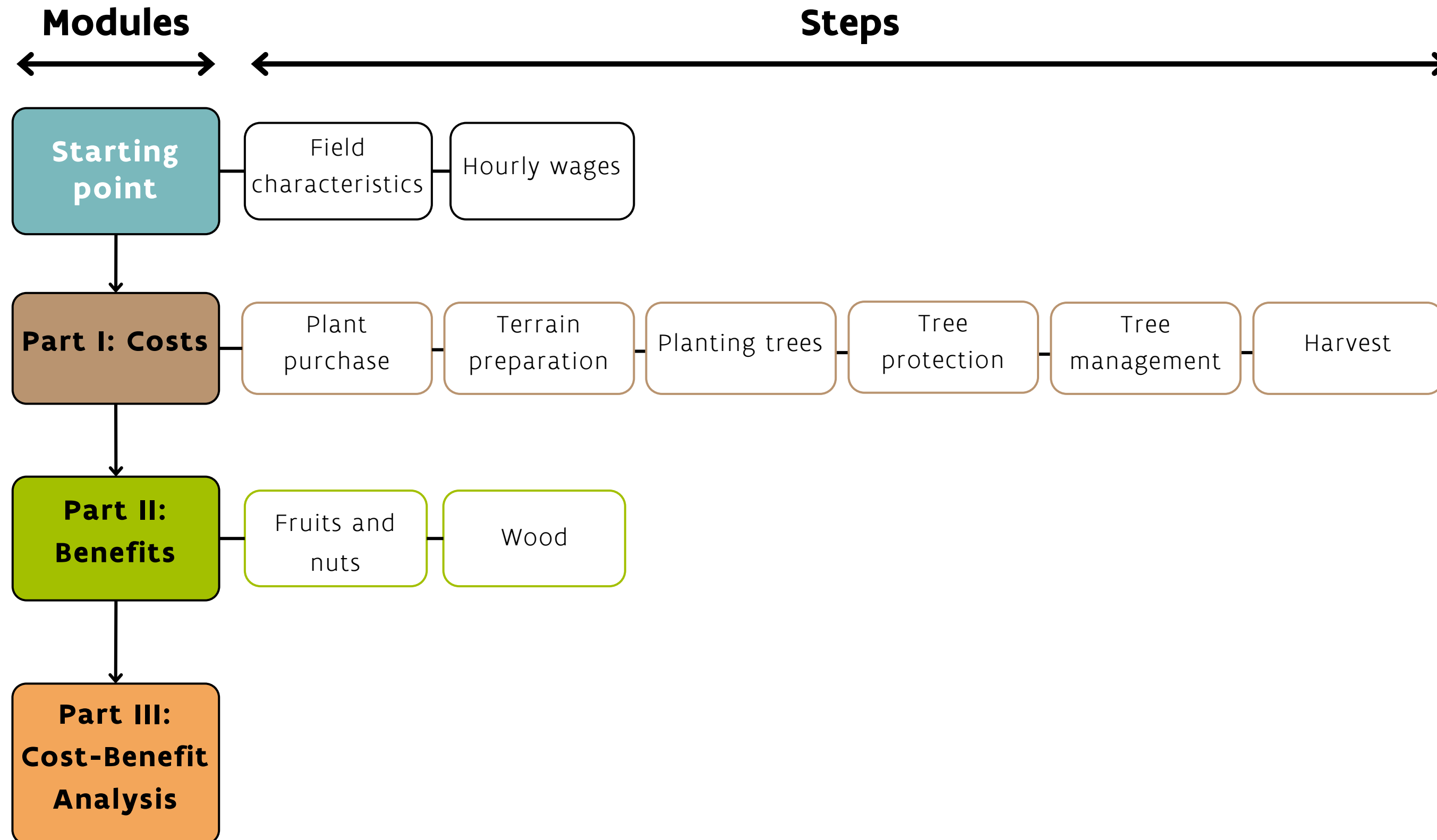
METHODOLOGY

How to create a flexible and interactive cost-benefit analysis tool for the tree component within agroforestry systems?



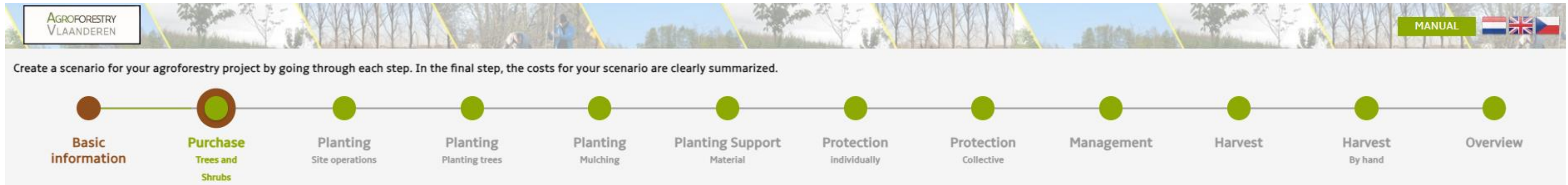
RESULTS

Part I. INTACT'S final structure



RESULTS

Part II. Web tool interface



Calls to action for support

- General help button for each step (explanation)
- More detailed information in the green text boxes.
- [Click here!](#) Button activates a pop-up with helpful images and/or tips.



Create a scenario for your agroforestry project by going through each step. In the final step, the costs for your scenario are clearly summarized.

Step 1B: Purchase trees and shrubs

For decimal numbers: use a period, not a comma

Which tree species do you want to plant?

You can search for the name of the tree (Dutch or Latin) by typing in the text field. To remove one tree species, click on the brown cross next to the name of the tree. To remove all tree species, click on the black cross at the top right of the text box

- Apple (Malus domestica)
- Pear Varieties (Pyrus communis)
- Sweet chestnut (Castanea sativa)
- Walnut 'Broadview' (Juglans regia 'Broadview')

Choose the number, type, length-thickness size and cultivation method per tree

For more explanation about a specific term, place your cursor on the icon.

Click on 'Calculate' after entering the number per tree species to refresh the 'Overview of tree calculation' section.

Tree	Type	Length, thickness	Growing method	Number	Price per tree	Total per tree species
Apple	High-stem	Size 8/10	Bare root	50	37.00	1850.00
Pear Varieties	High-stem	Size 8/10	Bare root	50	45.00	2250.00
Sweet chestnut	High-stem	Size 10/12	Bare root	50	85.00	4250.00
Walnut 'Broadview'	High-stem	Size 10/12	Bare root	50	105.00	5250.00
Total 				200		13600€

[Calculate](#)

Tree calculation overview:

Plot area: 2.00 hectares

RESULTS

Part III. Demo web tool INTACT

AGROFORESTRY VLAANDEREN

selecteren | opnemen

MANUAL

Create a scenario for your agroforestry project by going through each step. In the final step, the costs for your scenario are clearly summarized.

Basic information | Purchase (Trees and Shrubs) | Planting (Site operations) | Planting (Planting trees) | Planting (Mulching) | Planting Support (Material) | Protection (Individually) | Protection (Collective) | Management | Harvest | Harvest (By hand) | Overview

Step 1: Basic information: ?

For decimal numbers: use a period, not a comma

Your plot:

Enter the area of your plot (ha)	<input type="text" value="2"/>
Number of trees already present on the plot	<input type="text" value="0"/>

Expected area under trees (ha)
Need help calculating the area under trees? [Click here!](#)

Enter the number of tree rows	<input type="text" value="10"/>
Length of tree row (in meters)	<input type="text" value="100"/>
Width of tree row (in meters)	<input type="text" value="3"/>
Expected area under trees (in hectares): <i>Adjust this value if necessary</i>	<input type="text" value="0.30"/>

Below is the wage information for three different types of wages. You can adjust these amounts yourself depending on your own situation. Make sure you specify the wage in euros per hour.

Contractor (€/hour) ?	<input type="text" value="38"/>
Seasonal worker (€/hour) ?	<input type="text" value="25"/>
Own labor (€/hour) ?	<input type="text" value="0"/>

Next >>

^

DISCUSSION

Lessons learnt by the developers



TREES/SHRUBS ONLY

Crop and/or animal components/calculations and crop-tree and animal-tree interactions are not included in INTACT.



USERS' FREEDOM

To what extent should the user be able to adjust figures to avoid false outcomes?



INTERPRETATION

INTACT does not replace professional advice and consultancy.



USER EXPERIENCE?

INTACT has been launched the Friday before EURAF starts.



CONCLUSION

- **SO, INTACT IS ...**

A financial tool which can be used to get insight into the costs and benefits of a (new) agroforestry project for the first 20 years after planting trees.

- **INTACT 1.0 COVERS ...**

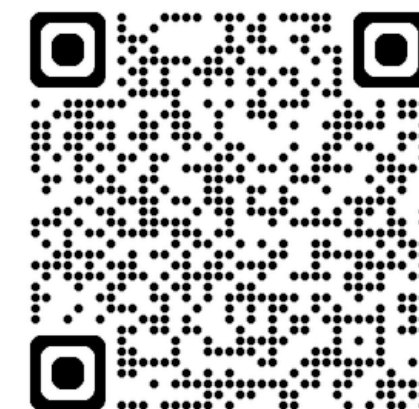
Most aspects of investment and maintenance costs, as well as expected income from trees and shrubs relevant to agroforestry systems.

- **USER-EXPERIENCE**

Two physical test moments were organised for the draft versions but not yet for the final version: **feel free to explore INTACT and provide feedback.**

- **INTACT IS LAUNCHED!**

You can find INTACT on the Agroforestry Planner



REFERENCES

Abstract

¹Bijl, M. & Forestry Service Group (FSG) (2021). AFP Model (Model 5) [Dataset].

²CARAT development team (2023). CARAT: an online tool for quantifying carbon sequestration in agroforestry systems, developed in collaboration with BDB, ILVO and Fornalab, Belgium.

³Consortium Agroforestry Vlaanderen. (n.d.). Agroforestry Planner. Retrieved December 19, 2023, from <https://bdbnet.bdb.be/pls/apex/f?p=147:11>

⁴De Jaeger, L. (2022). Berekentool voor Voedselbossen (Version V280922) [Dataset].

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⁷van Raffe, J. K., & de Jong, J. J. (2020). Normenboek natuur, bos en landschap 2020: Tijd- en kostennormen voor inrichting en beheer van natuurterreinen, bossen en landschapselementen. Wageningen Environmental Research.

Manual INTACT 1.0

<https://www.agroforestryvlaanderen.be/en/agroforestryplanner>

Dataset INTACT 1.0

Carton, S., Rahahleh, J., & Reubens, B. (2024). Dataset of INTACT: INTeractive Agroforestry Cost-benefit analysis Tool [Data set]. Zenodo.

<https://doi.org/10.5281/zenodo.11281617>

THANK YOU!

Questions?



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